

# Amazon-Web-Services

## Exam Questions DAS-C01

AWS Certified Data Analytics - Specialty



#### NEW QUESTION 1

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 2

A data analyst is using AWS Glue to organize, cleanse, validate, and format a 200 GB dataset. The data analyst triggered the job to run with the Standard worker type. After 3 hours, the AWS Glue job status is still RUNNING. Logs from the job run show no error codes. The data analyst wants to improve the job execution time without overprovisioning. Which actions should the data analyst take?

- A. Enable job bookmarks in AWS Glue to estimate the number of data processing units (DPUs). Based on the profiled metrics, increase the value of the executor-cores job parameter.
- B. Enable job metrics in AWS Glue to estimate the number of data processing units (DPUs). Based on the profiled metrics, increase the value of the maximum capacity job parameter.
- C. Enable job metrics in AWS Glue to estimate the number of data processing units (DPUs). Based on the profiled metrics, increase the value of the spark.yarn.executor.memoryOverhead job parameter.
- D. Enable job bookmarks in AWS Glue to estimate the number of data processing units (DPUs). Based on the profiled metrics, increase the value of the num-executors job parameter.

**Answer: B**

#### NEW QUESTION 3

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.
- E. Send the results to an AWS Lambda function that sends the alarm to Amazon SNS.

**Answer: D**

#### NEW QUESTION 4

A power utility company is deploying thousands of smart meters to obtain real-time updates about power consumption. The company is using Amazon Kinesis Data Streams to collect the data streams from smart meters. The consumer application uses the Kinesis Client Library (KCL) to retrieve the stream data. The company has only one consumer application. The company observes an average of 1 second of latency from the moment that a record is written to the stream until the record is read by a consumer application. The company must reduce this latency to 500 milliseconds. Which solution meets these requirements?

- A. Use enhanced fan-out in Kinesis Data Streams.
- B. Increase the number of shards for the Kinesis data stream.
- C. Reduce the propagation delay by overriding the KCL default settings.
- D. Develop consumers by using Amazon Kinesis Data Firehose.

**Answer: C**

#### Explanation:

The KCL defaults are set to follow the best practice of polling every 1 second. This default results in average propagation delays that are typically below 1 second.

#### NEW QUESTION 5

A company needs to store objects containing log data in JSON format. The objects are generated by eight applications running in AWS. Six of the applications generate a total of 500 KiB of data per second, and two of the applications can generate up to 2 MiB of data per second. A data engineer wants to implement a scalable solution to capture and store usage data in an Amazon S3 bucket. The usage data objects need to be reformatted, converted to .csv format, and then compressed before they are stored in Amazon S3. The company requires the solution to include the least custom code possible and has authorized the data engineer to request a service quota increase if needed. Which solution meets these requirements?

- A. Configure an Amazon Kinesis Data Firehose delivery stream for each applicatio

- B. Write AWS Lambda functions to read log data objects from the stream for each applicatio
- C. Have the function perform reformatting and .csv conversio
- D. Enable compression on all the delivery streams.
- E. Configure an Amazon Kinesis data stream with one shard per applicatio
- F. Write an AWS Lambda function to read usage data objects from the shard
- G. Have the function perform .csv conversion, reformatting, and compression of the dat
- H. Have the function store the output in Amazon S3.
- I. Configure an Amazon Kinesis data stream for each applicatio
- J. Write an AWS Lambda function to read usage data objects from the stream for each applicatio
- K. Have the function perform .csv conversion, reformatting, and compression of the dat
- L. Have the function store the output in Amazon S3.
- M. Store usage data objects in an Amazon DynamoDB tabl
- N. Configure a DynamoDB stream to copy the objects to an S3 bucke
- O. Configure an AWS Lambda function to be triggered when objects are written to the S3 bucke
- P. Have the function convert the objects into .csv format.

**Answer:** A

#### NEW QUESTION 6

A company has 1 million scanned documents stored as image files in Amazon S3. The documents contain typewritten application forms with information including the applicant first name, applicant last name, application date, application type, and application text. The company has developed a machine learning algorithm to extract the metadata values from the scanned documents. The company wants to allow internal data analysts to analyze and find applications using the applicant name, application date, or application text. The original images should also be downloadable. Cost control is secondary to query performance. Which solution organizes the images and metadata to drive insights while meeting the requirements?

- A. For each image, use object tags to add the metadat
- B. Use Amazon S3 Select to retrieve the files based on the applicant name and application date.
- C. Index the metadata and the Amazon S3 location of the image file in Amazon Elasticsearch Service. Allow the data analysts to use Kibana to submit queries to the Elasticsearch cluster.
- D. Store the metadata and the Amazon S3 location of the image file in an Amazon Redshift tabl
- E. Allow the data analysts to run ad-hoc queries on the table.
- F. Store the metadata and the Amazon S3 location of the image files in an Apache Parquet file in Amazon S3, and define a table in the AWS Glue Data Catalo
- G. Allow data analysts to use Amazon Athena to submit custom queries.

**Answer:** B

#### Explanation:

<https://aws.amazon.com/blogs/machine-learning/automatically-extract-text-and-structured-data-from-documents>

#### NEW QUESTION 7

An airline has been collecting metrics on flight activities for analytics. A recently completed proof of concept demonstrates how the company provides insights to data analysts to improve on-time departures. The proof of concept used objects in Amazon S3, which contained the metrics in .csv format, and used Amazon Athena for querying the data. As the amount of data increases, the data analyst wants to optimize the storage solution to improve query performance. Which options should the data analyst use to improve performance as the data lake grows? (Choose three.)

- A. Add a randomized string to the beginning of the keys in S3 to get more throughput across partitions.
- B. Use an S3 bucket in the same account as Athena.
- C. Compress the objects to reduce the data transfer I/O.
- D. Use an S3 bucket in the same Region as Athena.
- E. Preprocess the .csv data to JSON to reduce I/O by fetching only the document keys needed by the query.
- F. Preprocess the .csv data to Apache Parquet to reduce I/O by fetching only the data blocks needed for predicates.

**Answer:** CDF

#### Explanation:

<https://aws.amazon.com/blogs/big-data/top-10-performance-tuning-tips-for-amazon-athena/>

#### NEW QUESTION 8

A financial company uses Amazon S3 as its data lake and has set up a data warehouse using a multi-node Amazon Redshift cluster. The data files in the data lake are organized in folders based on the data source of each data file. All the data files are loaded to one table in the Amazon Redshift cluster using a separate COPY command for each data file location. With this approach, loading all the data files into Amazon Redshift takes a long time to complete. Users want a faster solution with little or no increase in cost while maintaining the segregation of the data files in the S3 data lake. Which solution meets these requirements?

- A. Use Amazon EMR to copy all the data files into one folder and issue a COPY command to load the data into Amazon Redshift.
- B. Load all the data files in parallel to Amazon Aurora, and run an AWS Glue job to load the data into Amazon Redshift.
- C. Use an AWS Glue job to copy all the data files into one folder and issue a COPY command to load the data into Amazon Redshift.
- D. Create a manifest file that contains the data file locations and issue a COPY command to load the data into Amazon Redshift.

**Answer:** D

#### Explanation:

<https://docs.aws.amazon.com/redshift/latest/dg/loading-data-files-using-manifest.html> "You can use a manifest to ensure that the COPY command loads all of the required files, and only the required files, for a data load"

#### NEW QUESTION 9

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 10

An online retail company uses Amazon Redshift to store historical sales transactions. The company is required to encrypt data at rest in the clusters to comply with the Payment Card Industry Data Security Standard (PCI DSS). A corporate governance policy mandates management of encryption keys using an on-premises hardware security module (HSM).

Which solution meets these requirements?

- A. Create and manage encryption keys using AWS CloudHSM Classic
- B. Launch an Amazon Redshift cluster in a VPC with the option to use CloudHSM Classic for key management.
- C. Create a VPC and establish a VPN connection between the VPC and the on-premises network
- D. Create an HSM connection and client certificate for the on-premises HS
- E. Launch a cluster in the VPC with the option to use the on-premises HSM to store keys.
- F. Create an HSM connection and client certificate for the on-premises HS
- G. Enable HSM encryption on the existing unencrypted cluster by modifying the cluster
- H. Connect to the VPC where the Amazon Redshift cluster resides from the on-premises network using a VPN.
- I. Create a replica of the on-premises HSM in AWS CloudHSM
- J. Launch a cluster in a VPC with the option to use CloudHSM to store keys.

**Answer:** B

#### NEW QUESTION 10

A data engineering team within a shared workspace company wants to build a centralized logging system for all weblogs generated by the space reservation system. The company has a fleet of Amazon EC2 instances that process requests for shared space reservations on its website. The data engineering team wants to ingest all weblogs into a service that will provide a near-real-time search engine. The team does not want to manage the maintenance and operation of the logging system.

Which solution allows the data engineering team to efficiently set up the web logging system within AWS?

- A. Set up the Amazon CloudWatch agent to stream weblogs to CloudWatch logs and subscribe the Amazon Kinesis data stream to CloudWatch
- B. Choose Amazon Elasticsearch Service as the end destination of the weblogs.
- C. Set up the Amazon CloudWatch agent to stream weblogs to CloudWatch logs and subscribe the Amazon Kinesis Data Firehose delivery stream to CloudWatch
- D. Choose Amazon Elasticsearch Service as the end destination of the weblogs.
- E. Set up the Amazon CloudWatch agent to stream weblogs to CloudWatch logs and subscribe the Amazon Kinesis data stream to CloudWatch
- F. Configure Splunk as the end destination of the weblogs.
- G. Set up the Amazon CloudWatch agent to stream weblogs to CloudWatch logs and subscribe the Amazon Kinesis Firehose delivery stream to CloudWatch
- H. Configure Amazon DynamoDB as the end destination of the weblog

**Answer:** B

#### Explanation:

[https://docs.aws.amazon.com/AmazonCloudWatch/latest/logs/CWL\\_ES\\_Stream.html](https://docs.aws.amazon.com/AmazonCloudWatch/latest/logs/CWL_ES_Stream.html)

#### NEW QUESTION 12

A media company wants to perform machine learning and analytics on the data residing in its Amazon S3 data lake. There are two data transformation requirements that will enable the consumers within the company to create reports:

- > Daily transformations of 300 GB of data with different file formats landing in Amazon S3 at a scheduled time.
- > One-time transformations of terabytes of archived data residing in the S3 data lake.

Which combination of solutions cost-effectively meets the company's requirements for transforming the data? (Choose three.)

- A. For daily incoming data, use AWS Glue crawlers to scan and identify the schema.
- B. For daily incoming data, use Amazon Athena to scan and identify the schema.
- C. For daily incoming data, use Amazon Redshift to perform transformations.
- D. For daily incoming data, use AWS Glue workflows with AWS Glue jobs to perform transformations.
- E. For archived data, use Amazon EMR to perform data transformations.
- F. For archived data, use Amazon SageMaker to perform data transformations.

**Answer:** ADE

#### NEW QUESTION 17

A data analyst is designing an Amazon QuickSight dashboard using centralized sales data that resides in Amazon Redshift. The dashboard must be restricted so that a salesperson in Sydney, Australia, can see only the Australia view and that a salesperson in New York can see only United States (US) data.

What should the data analyst do to ensure the appropriate data security is in place?

- A. Place the data sources for Australia and the US into separate SPICE capacity pools.
- B. Set up an Amazon Redshift VPC security group for Australia and the US.
- C. Deploy QuickSight Enterprise edition to implement row-level security (RLS) to the sales table.
- D. Deploy QuickSight Enterprise edition and set up different VPC security groups for Australia and the US.

**Answer:** D

#### NEW QUESTION 21

A company receives data from its vendor in JSON format with a timestamp in the file name. The vendor uploads the data to an Amazon S3 bucket, and the data is registered into the company's data lake for analysis and reporting. The company has configured an S3 Lifecycle policy to archive all files to S3 Glacier after 5 days.

The company wants to ensure that its AWS Glue crawler catalogs data only from S3 Standard storage and ignores the archived files. A data analytics specialist must implement a solution to achieve this goal without changing the current S3 bucket configuration.

Which solution meets these requirements?

- A. Use the exclude patterns feature of AWS Glue to identify the S3 Glacier files for the crawler to exclude.
- B. Schedule an automation job that uses AWS Lambda to move files from the original S3 bucket to a new S3 bucket for S3 Glacier storage.
- C. Use the excludeStorageClasses property in the AWS Glue Data Catalog table to exclude files on S3 Glacier storage
- D. Use the include patterns feature of AWS Glue to identify the S3 Standard files for the crawler to include.

**Answer: A**

#### NEW QUESTION 26

A regional energy company collects voltage data from sensors attached to buildings. To address any known dangerous conditions, the company wants to be alerted when a sequence of two voltage drops is detected within 10 minutes of a voltage spike at the same building. It is important to ensure that all messages are delivered as quickly as possible. The system must be fully managed and highly available. The company also needs a solution that will automatically scale up as it covers additional cities with this monitoring feature. The alerting system is subscribed to an Amazon SNS topic for remediation.

Which solution meets these requirements?

- A. Create an Amazon Managed Streaming for Kafka cluster to ingest the data, and use an Apache Spark Streaming with Apache Kafka consumer API in an automatically scaled Amazon EMR cluster to process the incoming data
- B. Use the Spark Streaming application to detect the known event sequence and send the SNS message.
- C. Create a REST-based web service using Amazon API Gateway in front of an AWS Lambda function. Create an Amazon RDS for PostgreSQL database with sufficient Provisioned IOPS (PIOPS). In the Lambda function, store incoming events in the RDS database and query the latest data to detect the known event sequence and send the SNS message.
- D. Create an Amazon Kinesis Data Firehose delivery stream to capture the incoming sensor data
- E. Use an AWS Lambda transformation function to detect the known event sequence and send the SNS message.
- F. Create an Amazon Kinesis data stream to capture the incoming sensor data and create another stream for alert message
- G. Set up AWS Application Auto Scaling on both
- H. Create a Kinesis Data Analytics for Java application to detect the known event sequence, and add a message to the message stream
- I. Configure an AWS Lambda function to poll the message stream and publish to the SNS topic.

**Answer: D**

#### NEW QUESTION 31

A company wants to collect and process events data from different departments in near-real time. Before storing the data in Amazon S3, the company needs to clean the data by standardizing the format of the address and timestamp columns. The data varies in size based on the overall load at each particular point in time. A single data record can be 100 KB-10 MB.

How should a data analytics specialist design the solution for data ingestion?

- A. Use Amazon Kinesis Data Stream
- B. Configure a stream for the raw data
- C. Use a Kinesis Agent to write data to the stream
- D. Create an Amazon Kinesis Data Analytics application that reads data from the raw stream, cleanses it, and stores the output to Amazon S3.
- E. Use Amazon Kinesis Data Firehose
- F. Configure a Firehose delivery stream with a preprocessing AWS Lambda function for data cleansing
- G. Use a Kinesis Agent to write data to the delivery stream
- H. Configure Kinesis Data Firehose to deliver the data to Amazon S3.
- I. Use Amazon Managed Streaming for Apache Kafka
- J. Configure a topic for the raw data
- K. Use a Kafka producer to write data to the topic
- L. Create an application on Amazon EC2 that reads data from the topic by using the Apache Kafka consumer API, cleanses the data, and writes to Amazon S3.
- M. Use Amazon Simple Queue Service (Amazon SQS). Configure an AWS Lambda function to read events from the SQS queue and upload the events to Amazon S3.

**Answer: B**

#### NEW QUESTION 32

A company owns facilities with IoT devices installed across the world. The company is using Amazon Kinesis Data Streams to stream data from the devices to Amazon S3. The company's operations team wants to get insights from the IoT data to monitor data quality at ingestion. The insights need to be derived in near-real time, and the output must be logged to Amazon DynamoDB for further analysis.

Which solution meets these requirements?

- A. Connect Amazon Kinesis Data Analytics to analyze the stream data
- B. Save the output to DynamoDB by using the default output from Kinesis Data Analytics.
- C. Connect Amazon Kinesis Data Analytics to analyze the stream data
- D. Save the output to DynamoDB by using an AWS Lambda function.
- E. Connect Amazon Kinesis Data Firehose to analyze the stream data by using an AWS Lambda function. Save the output to DynamoDB by using the default output from Kinesis Data Firehose.
- F. Connect Amazon Kinesis Data Firehose to analyze the stream data by using an AWS Lambda function. Save the data to Amazon S3. Then run an AWS Glue job on schedule to ingest the data into DynamoDB.

**Answer: C**

#### NEW QUESTION 36

A hospital uses wearable medical sensor devices to collect data from patients. The hospital is architecting a near-real-time solution that can ingest the data securely at scale. The solution should also be able to remove the patient's protected health information (PHI) from the streaming data and store the data in durable storage.

Which solution meets these requirements with the least operational overhead?

- A. Ingest the data using Amazon Kinesis Data Streams, which invokes an AWS Lambda function using Kinesis Client Library (KCL) to remove all PH
- B. Write the data in Amazon S3.
- C. Ingest the data using Amazon Kinesis Data Firehose to write the data to Amazon S3. Have Amazon S3 trigger an AWS Lambda function that parses the sensor data to remove all PHI in Amazon S3.
- D. Ingest the data using Amazon Kinesis Data Streams to write the data to Amazon S3. Have the data stream launch an AWS Lambda function that parses the sensor data and removes all PHI in Amazon S3.
- E. Ingest the data using Amazon Kinesis Data Firehose to write the data to Amazon S3. Implement a transformation AWS Lambda function that parses the sensor data to remove all PHI.

**Answer:** D

**Explanation:**

<https://aws.amazon.com/blogs/big-data/persist-streaming-data-to-amazon-s3-using-amazon-kinesis-firehose-and>

#### NEW QUESTION 38

A company operates toll services for highways across the country and collects data that is used to understand usage patterns. Analysts have requested the ability to run traffic reports in near-real time. The company is interested in building an ingestion pipeline that loads all the data into an Amazon Redshift cluster and alerts operations personnel when toll traffic for a particular toll station does not meet a specified threshold. Station data and the corresponding threshold values are stored in Amazon S3.

Which approach is the MOST efficient way to meet these requirements?

- A. Use Amazon Kinesis Data Firehose to collect data and deliver it to Amazon Redshift and Amazon Kinesis Data Analytics simultaneously
- B. Create a reference data source in Kinesis Data Analytics to temporarily store the threshold values from Amazon S3 and compare the count of vehicles for a particular toll station against its corresponding threshold value
- C. Use AWS Lambda to publish an Amazon Simple Notification Service (Amazon SNS) notification if the threshold is not met.
- D. Use Amazon Kinesis Data Streams to collect all the data from toll station
- E. Create a stream in Kinesis Data Streams to temporarily store the threshold values from Amazon S3. Send both streams to Amazon Kinesis Data Analytics to compare the count of vehicles for a particular toll station against its corresponding threshold value
- F. Use AWS Lambda to publish an Amazon Simple Notification Service (Amazon SNS) notification if the threshold is not met
- G. Connect Amazon Kinesis Data Firehose to Kinesis Data Streams to deliver the data to Amazon Redshift.
- H. Use Amazon Kinesis Data Firehose to collect data and deliver it to Amazon Redshift
- I. Then, automatically trigger an AWS Lambda function that queries the data in Amazon Redshift, compares the count of vehicles for a particular toll station against its corresponding threshold values read from Amazon S3, and publishes an Amazon Simple Notification Service (Amazon SNS) notification if the threshold is not met.
- J. Use Amazon Kinesis Data Firehose to collect data and deliver it to Amazon Redshift and Amazon Kinesis Data Analytics simultaneously
- K. Use Kinesis Data Analytics to compare the count of vehicles against the threshold value for the station stored in a table as an in-application stream based on information stored in Amazon S3. Configure an AWS Lambda function as an output for the application that will publish an Amazon Simple Queue Service (Amazon SQS) notification to alert operations personnel if the threshold is not met.

**Answer:** D

#### NEW QUESTION 40

A company is building a service to monitor fleets of vehicles. The company collects IoT data from a device in each vehicle and loads the data into Amazon Redshift in near-real time. Fleet owners upload .csv files containing vehicle reference data into Amazon S3 at different times throughout the day. A nightly process loads the vehicle reference data from Amazon S3 into Amazon Redshift. The company joins the IoT data from the device and the vehicle reference data to power reporting and dashboards. Fleet owners are frustrated by waiting a day for the dashboards to update.

Which solution would provide the SHORTEST delay between uploading reference data to Amazon S3 and the change showing up in the owners' dashboards?

- A. Use S3 event notifications to trigger an AWS Lambda function to copy the vehicle reference data into Amazon Redshift immediately when the reference data is uploaded to Amazon S3.
- B. Create and schedule an AWS Glue Spark job to run every 5 minutes
- C. The job inserts reference data into Amazon Redshift.
- D. Send reference data to Amazon Kinesis Data Stream
- E. Configure the Kinesis data stream to directly load the reference data into Amazon Redshift in real time.
- F. Send the reference data to an Amazon Kinesis Data Firehose delivery stream
- G. Configure Kinesis with a buffer interval of 60 seconds and to directly load the data into Amazon Redshift.

**Answer:** A

#### NEW QUESTION 41

A data analytics specialist is building an automated ETL ingestion pipeline using AWS Glue to ingest compressed files that have been uploaded to an Amazon S3 bucket. The ingestion pipeline should support incremental data processing.

Which AWS Glue feature should the data analytics specialist use to meet this requirement?

- A. Workflows
- B. Triggers
- C. Job bookmarks
- D. Classifiers

**Answer:** C

#### NEW QUESTION 42

A company has collected more than 100 TB of log files in the last 24 months. The files are stored as raw text in a dedicated Amazon S3 bucket. Each object has a key of the form year-month-day\_log\_HH:mm:ss.txt where HH:mm:ss represents the time the log file was initially created. A table was created in Amazon Athena that

points to the S3 bucket. One-time queries are run against a subset of columns in the table several times an hour. A data analyst must make changes to reduce the cost of running these queries. Management wants a solution with minimal maintenance overhead. Which combination of steps should the data analyst take to meet these requirements? (Choose three.)

- A. Convert the log files to Apache Avro format.
- B. Add a key prefix of the form date=year-month-day/ to the S3 objects to partition the data.
- C. Convert the log files to Apache Parquet format.
- D. Add a key prefix of the form year-month-day/ to the S3 objects to partition the data.
- E. Drop and recreate the table with the PARTITIONED BY clause.
- F. Run the ALTER TABLE ADD PARTITION statement.
- G. Drop and recreate the table with the PARTITIONED BY clause.
- H. Run the MSCK REPAIR TABLE statement.

**Answer:** BCF

#### NEW QUESTION 47

A mortgage company has a microservice for accepting payments. This microservice uses the Amazon DynamoDB encryption client with AWS KMS managed keys to encrypt the sensitive data before writing the data to DynamoDB. The finance team should be able to load this data into Amazon Redshift and aggregate the values within the sensitive fields. The Amazon Redshift cluster is shared with other data analysts from different business units. Which steps should a data analyst take to accomplish this task efficiently and securely?

- A. Create an AWS Lambda function to process the DynamoDB stream.
- B. Decrypt the sensitive data using the same KMS key.
- C. Save the output to a restricted S3 bucket for the finance team.
- D. Create a finance table in Amazon Redshift that is accessible to the finance team only.
- E. Use the COPY command to load the data from Amazon S3 to the finance table.
- F. Create an AWS Lambda function to process the DynamoDB stream.
- G. Save the output to a restricted S3 bucket for the finance team.
- H. Create a finance table in Amazon Redshift that is accessible to the finance team only.
- I. Use the COPY command with the IAM role that has access to the KMS key to load the data from S3 to the finance table.
- J. Create an Amazon EMR cluster with an EMR\_EC2\_DefaultRole role that has access to the KMS key. Create Apache Hive tables that reference the data stored in DynamoDB and the finance table in Amazon Redshift.
- K. In Hive, select the data from DynamoDB and then insert the output to the finance table in Amazon Redshift.
- L. Create an Amazon EMR cluster.
- M. Create Apache Hive tables that reference the data stored in DynamoDB.
- N. Insert the output to the restricted Amazon S3 bucket for the finance team.
- O. Use the COPY command with the IAM role that has access to the KMS key to load the data from Amazon S3 to the finance table in Amazon Redshift.

**Answer:** B

#### NEW QUESTION 49

A manufacturing company wants to create an operational analytics dashboard to visualize metrics from equipment in near-real time. The company uses Amazon Kinesis Data Streams to stream the data to other applications. The dashboard must automatically refresh every 5 seconds. A data analytics specialist must design a solution that requires the least possible implementation effort. Which solution meets these requirements?

- A. Use Amazon Kinesis Data Firehose to store the data in Amazon S3. Use Amazon QuickSight to build the dashboard.
- B. Use Apache Spark Streaming on Amazon EMR to read the data in near-real time.
- C. Develop a custom application for the dashboard by using D3.js.
- D. Use Amazon Kinesis Data Firehose to push the data into an Amazon Elasticsearch Service (Amazon ES) cluster.
- E. Visualize the data by using a Kibana dashboard.
- F. Use AWS Glue streaming ETL to store the data in Amazon S3. Use Amazon QuickSight to build the dashboard.

**Answer:** B

#### NEW QUESTION 53

An ecommerce company is migrating its business intelligence environment from on premises to the AWS Cloud. The company will use Amazon Redshift in a public subnet and Amazon QuickSight. The tables already are loaded into Amazon Redshift and can be accessed by a SQL tool. The company starts QuickSight for the first time. During the creation of the data source, a data analytics specialist enters all the information and tries to validate the connection. An error with the following message occurs: "Creating a connection to your data source timed out." How should the data analytics specialist resolve this error?

- A. Grant the SELECT permission on Amazon Redshift tables.
- B. Add the QuickSight IP address range into the Amazon Redshift security group.
- C. Create an IAM role for QuickSight to access Amazon Redshift.
- D. Use a QuickSight admin user for creating the dataset.

**Answer:** A

#### Explanation:

Connection to the database times out

Your client connection to the database appears to hang or time out when running long queries, such as a COPY command. In this case, you might observe that the Amazon Redshift console displays that the query has completed, but the client tool itself still appears to be running the query. The results of the query might be missing or incomplete depending on when the connection stopped.

#### NEW QUESTION 55

A company analyzes its data in an Amazon Redshift data warehouse, which currently has a cluster of three dense storage nodes. Due to a recent business acquisition, the company needs to load an additional 4 TB of user data into Amazon Redshift. The engineering team will combine all the user data and apply complex calculations that require I/O intensive resources. The company needs to adjust the cluster's capacity to support the change in analytical and storage

requirements.

Which solution meets these requirements?

- A. Resize the cluster using elastic resize with dense compute nodes.
- B. Resize the cluster using classic resize with dense compute nodes.
- C. Resize the cluster using elastic resize with dense storage nodes.
- D. Resize the cluster using classic resize with dense storage nodes.

**Answer: C**

#### NEW QUESTION 56

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/#:~:t>

[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 59

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 62

Three teams of data analysts use Apache Hive on an Amazon EMR cluster with the EMR File System (EMRFS) to query data stored within each team's Amazon S3 bucket. The EMR cluster has Kerberos enabled and is configured to authenticate users from the corporate Active Directory. The data is highly sensitive, so access must be limited to the members of each team.

Which steps will satisfy the security requirements?

- A. For the EMR cluster Amazon EC2 instances, create a service role that grants no access to Amazon S3. Create three additional IAM roles, each granting access to each team's specific bucket
- B. Add the additional IAM roles to the cluster's EMR role for the EC2 trust policy
- C. Create a security configuration mapping for the additional IAM roles to Active Directory user groups for each team.
- D. For the EMR cluster Amazon EC2 instances, create a service role that grants no access to Amazon S3. Create three additional IAM roles, each granting access to each team's specific bucket
- E. Add the service role for the EMR cluster EC2 instances to the trust policies for the additional IAM role
- F. Create a security configuration mapping for the additional IAM roles to Active Directory user groups for each team.
- G. For the EMR cluster Amazon EC2 instances, create a service role that grants full access to Amazon S3. Create three additional IAM roles, each granting access to each team's specific bucket
- H. Add the service role for the EMR cluster EC2 instances to the trust policies for the additional IAM role
- I. Create a security configuration mapping for the additional IAM roles to Active Directory user groups for each team.
- J. For the EMR cluster Amazon EC2 instances, create a service role that grants full access to Amazon S3. Create three additional IAM roles, each granting access to each team's specific bucket
- K. Add the service role for the EMR cluster EC2 instances to the trust policies for the base IAM role
- L. Create a security configuration mapping for the additional IAM roles to Active Directory user groups for each team.

**Answer: C**

#### NEW QUESTION 66

A transport company wants to track vehicular movements by capturing geolocation records. The records are 10 B in size and up to 10,000 records are captured each second. Data transmission delays of a few minutes are acceptable, considering unreliable network conditions. The transport company decided to use Amazon Kinesis Data Streams to ingest the data. The company is looking for a reliable mechanism to send data to Kinesis Data Streams while maximizing the throughput efficiency of the Kinesis shards.

Which solution will meet the company's requirements?

- A. Kinesis Agent

- B. Kinesis Producer Library (KPL)
- C. Kinesis Data Firehose
- D. Kinesis SDK

**Answer: B**

#### NEW QUESTION 68

An online gaming company is using an Amazon Kinesis Data Analytics SQL application with a Kinesis data stream as its source. The source sends three non-null fields to the application: player\_id, score, and us\_5\_digit\_zip\_code.

A data analyst has a .csv mapping file that maps a small number of us\_5\_digit\_zip\_code values to a territory code. The data analyst needs to include the territory code, if one exists, as an additional output of the Kinesis Data Analytics application.

How should the data analyst meet this requirement while minimizing costs?

- A. Store the contents of the mapping file in an Amazon DynamoDB tabl
- B. Preprocess the records as they arrive in the Kinesis Data Analytics application with an AWS Lambda function that fetches the mapping and supplements each record to include the territory code, if one exist
- C. Change the SQL query in the application to include the new field in the SELECT statement.
- D. Store the mapping file in an Amazon S3 bucket and configure the reference data column headers for the.csv file in the Kinesis Data Analytics applicatio
- E. Change the SQL query in the application to include a join to the file's S3 Amazon Resource Name (ARN), and add the territory code field to the SELECT columns.
- F. Store the mapping file in an Amazon S3 bucket and configure it as a reference data source for the Kinesis Data Analytics applicatio
- G. Change the SQL query in the application to include a join to the reference table and add the territory code field to the SELECT columns.
- H. Store the contents of the mapping file in an Amazon DynamoDB tabl
- I. Change the Kinesis DataAnalytics application to send its output to an AWS Lambda function that fetches the mapping and supplements each record to include the territory code, if one exist
- J. Forward the record from the Lambda function to the original application destination.

**Answer: C**

#### NEW QUESTION 72

A large financial company is running its ETL process. Part of this process is to move data from Amazon S3 into an Amazon Redshift cluster. The company wants to use the most cost-efficient method to load the dataset into Amazon Redshift.

Which combination of steps would meet these requirements? (Choose two.)

- A. Use the COPY command with the manifest file to load data into Amazon Redshift.
- B. Use S3DistCp to load files into Amazon Redshift.
- C. Use temporary staging tables during the loading process.
- D. Use the UNLOAD command to upload data into Amazon Redshift.
- E. Use Amazon Redshift Spectrum to query files from Amazon S3.

**Answer: AC**

#### NEW QUESTION 74

A manufacturing company uses Amazon S3 to store its data. The company wants to use AWS Lake Formation to provide granular-level security on those data assets. The data is in Apache Parquet format. The company has set a deadline for a consultant to build a data lake.

How should the consultant create the MOST cost-effective solution that meets these requirements?

- A. Run Lake Formation blueprints to move the data to Lake Formatio
- B. Once Lake Formation has the data, apply permissions on Lake Formation.
- C. To create the data catalog, run an AWS Glue crawler on the existing Parquet dat
- D. Register the Amazon S3 path and then apply permissions through Lake Formation to provide granular-level security.
- E. Install Apache Ranger on an Amazon EC2 instance and integrate with Amazon EM
- F. Using Ranger policies, create role-based access control for the existing data assets in Amazon S3.
- G. Create multiple IAM roles for different users and group
- H. Assign IAM roles to different data assets in Amazon S3 to create table-based and column-based access controls.

**Answer: A**

#### Explanation:

<https://aws.amazon.com/blogs/big-data/building-securing-and-managing-data-lakes-with-aws-lake-formation/>

#### NEW QUESTION 76

A company has an application that ingests streaming data. The company needs to analyze this stream over a 5-minute timeframe to evaluate the stream for anomalies with Random Cut Forest (RCF) and summarize the current count of status codes. The source and summarized data should be persisted for future use.

Which approach would enable the desired outcome while keeping data persistence costs low?

- A. Ingest the data stream with Amazon Kinesis Data Stream
- B. Have an AWS Lambda consumer evaluate the stream, collect the number status codes, and evaluate the data against a previously trained RCF mode
- C. Persist the source and results as a time series to Amazon DynamoDB.
- D. Ingest the data stream with Amazon Kinesis Data Stream
- E. Have a Kinesis Data Analytics application evaluate the stream over a 5-minute window using the RCF function and summarize the count of status code
- F. Persist the source and results to Amazon S3 through output delivery to Kinesis Data Firehose.
- G. Ingest the data stream with Amazon Kinesis Data Firehose with a delivery frequency of 1 minute or 1 MB in Amazon S3. Ensure Amazon S3 triggers an event to invoke an AWS Lambda consumer that evaluates the batch data, collects the number status codes, and evaluates the data against a previouslytrained RCF mode
- H. Persist the source and results as a time series to Amazon DynamoDB.
- I. Ingest the data stream with Amazon Kinesis Data Firehose with a delivery frequency of 5 minutes or 1 MB into Amazon S3. Have a Kinesis Data Analytics application evaluate the stream over a 1-minute window using the RCF function and summarize the count of status code
- J. Persist the results to Amazon S3 through a Kinesis Data Analytics output to an AWS Lambda integration.

Answer: B

#### NEW QUESTION 79

A bank operates in a regulated environment. The compliance requirements for the country in which the bank operates say that customer data for each state should only be accessible by the bank's employees located in the same state. Bank employees in one state should NOT be able to access data for customers who have provided a home address in a different state.

The bank's marketing team has hired a data analyst to gather insights from customer data for a new campaign being launched in certain states. Currently, data linking each customer account to its home state is stored in a tabular .csv file within a single Amazon S3 folder in a private S3 bucket. The total size of the S3 folder is 2 GB uncompressed. Due to the country's compliance requirements, the marketing team is not able to access this folder.

The data analyst is responsible for ensuring that the marketing team gets one-time access to customer data for their campaign analytics project, while being subject to all the compliance requirements and controls.

Which solution should the data analyst implement to meet the desired requirements with the LEAST amount of setup effort?

- A. Re-arrange data in Amazon S3 to store customer data about each state in a different S3 folder within the same bucket
- B. Set up S3 bucket policies to provide marketing employees with appropriate data access under compliance control
- C. Delete the bucket policies after the project.
- D. Load tabular data from Amazon S3 to an Amazon EMR cluster using s3DistC
- E. Implement a customHadoop-based row-level security solution on the Hadoop Distributed File System (HDFS) to provide marketing employees with appropriate data access under compliance control
- F. Terminate the EMR cluster after the project.
- G. Load tabular data from Amazon S3 to Amazon Redshift with the COPY command
- H. Use the built-in row-level security feature in Amazon Redshift to provide marketing employees with appropriate data access under compliance control
- I. Delete the Amazon Redshift tables after the project.
- J. Load tabular data from Amazon S3 to Amazon QuickSight Enterprise edition by directly importing it as a data source
- K. Use the built-in row-level security feature in Amazon QuickSight to provide marketing employees with appropriate data access under compliance control
- L. Delete Amazon QuickSight data sources after the project is complete.

Answer: C

#### NEW QUESTION 83

A streaming application is reading data from Amazon Kinesis Data Streams and immediately writing the data to an Amazon S3 bucket every 10 seconds. The application is reading data from hundreds of shards. The batch interval cannot be changed due to a separate requirement. The data is being accessed by Amazon Athena. Users are seeing degradation in query performance as time progresses.

Which action can help improve query performance?

- A. Merge the files in Amazon S3 to form larger files.
- B. Increase the number of shards in Kinesis Data Streams.
- C. Add more memory and CPU capacity to the streaming application.
- D. Write the files to multiple S3 buckets.

Answer: A

#### Explanation:

<https://aws.amazon.com/blogs/big-data/top-10-performance-tuning-tips-for-amazon-athena/>

#### NEW QUESTION 86

A banking company is currently using an Amazon Redshift cluster with dense storage (DS) nodes to store sensitive data. An audit found that the cluster is unencrypted. Compliance requirements state that a database with sensitive data must be encrypted through a hardware security module (HSM) with automated key rotation.

Which combination of steps is required to achieve compliance? (Choose two.)

- A. Set up a trusted connection with HSM using a client and server certificate with automatic key rotation.
- B. Modify the cluster with an HSM encryption option and automatic key rotation.
- C. Create a new HSM-encrypted Amazon Redshift cluster and migrate the data to the new cluster.
- D. Enable HSM with key rotation through the AWS CLI.
- E. Enable Elliptic Curve Diffie-Hellman Ephemeral (ECDHE) encryption in the HSM.

Answer: BD

#### NEW QUESTION 88

A company is streaming its high-volume billing data (100 MBps) to Amazon Kinesis Data Streams. A data analyst partitioned the data on account\_id to ensure that all records belonging to an account go to the same Kinesis shard and order is maintained. While building a custom consumer using the Kinesis Java SDK, the data analyst notices that, sometimes, the messages arrive out of order for account\_id. Upon further investigation, the data analyst discovers the messages that are out of order seem to be arriving from different shards for the same account\_id and are seen when a stream resize runs.

What is an explanation for this behavior and what is the solution?

- A. There are multiple shards in a stream and order needs to be maintained in the shard
- B. The data analyst needs to make sure there is only a single shard in the stream and no stream resize runs.
- C. The hash key generation process for the records is not working correctly
- D. The data analyst should generate an explicit hash key on the producer side so the records are directed to the appropriate shard accurately.
- E. The records are not being received by Kinesis Data Streams in order
- F. The producer should use the PutRecords API call instead of the PutRecord API call with the SequenceNumberForOrdering parameter.
- G. The consumer is not processing the parent shard completely before processing the child shards after a stream resize
- H. The data analyst should process the parent shard completely first before processing the child shards.

Answer: D

#### Explanation:

<https://docs.aws.amazon.com/streams/latest/dev/kinesis-using-sdk-java-after-resharding.html> the parent shards that remain after the reshard could still contain

data that you haven't read yet that was added to the stream before the reshard. If you read data from the child shards before having read all data from the parent shards, you could read data for a particular hash key out of the order given by the data records' sequence numbers. Therefore, assuming that the order of the data is important, you should, after a reshard, always continue to read data from the parent shards until it is exhausted. Only then should you begin reading data from the child shards.

#### NEW QUESTION 91

A software company hosts an application on AWS, and new features are released weekly. As part of the application testing process, a solution must be developed that analyzes logs from each Amazon EC2 instance to ensure that the application is working as expected after each deployment. The collection and analysis solution should be highly available with the ability to display new information with minimal delays.

Which method should the company use to collect and analyze the logs?

- A. Enable detailed monitoring on Amazon EC2, use Amazon CloudWatch agent to store logs in Amazon S3, and use Amazon Athena for fast, interactive log analytics.
- B. Use the Amazon Kinesis Producer Library (KPL) agent on Amazon EC2 to collect and send data to Kinesis Data Streams to further push the data to Amazon Elasticsearch Service and visualize using Amazon QuickSight.
- C. Use the Amazon Kinesis Producer Library (KPL) agent on Amazon EC2 to collect and send data to Kinesis Data Firehose to further push the data to Amazon Elasticsearch Service and Kibana.
- D. Use Amazon CloudWatch subscriptions to get access to a real-time feed of logs and have the logs delivered to Amazon Kinesis Data Streams to further push the data to Amazon Elasticsearch Service and Kibana.

**Answer: D**

#### NEW QUESTION 92

A marketing company is storing its campaign response data in Amazon S3. A consistent set of sources has generated the data for each campaign. The data is saved into Amazon S3 as .csv files. A business analyst will use Amazon Athena to analyze each campaign's data. The company needs the cost of ongoing data analysis with Athena to be minimized.

Which combination of actions should a data analytics specialist take to meet these requirements? (Choose two.)

- A. Convert the .csv files to Apache Parquet.
- B. Convert the .csv files to Apache Avro.
- C. Partition the data by campaign.
- D. Partition the data by source.
- E. Compress the .csv files.

**Answer: AC**

#### Explanation:

<https://aws.amazon.com/blogs/big-data/top-10-performance-tuning-tips-for-amazon-athena/>

#### NEW QUESTION 96

A transportation company uses IoT sensors attached to trucks to collect vehicle data for its global delivery fleet. The company currently sends the sensor data in small .csv files to Amazon S3. The files are then loaded into a 10-node Amazon Redshift cluster with two slices per node and queried using both Amazon Athena and Amazon Redshift. The company wants to optimize the files to reduce the cost of querying and also improve the speed of data loading into the Amazon Redshift cluster.

Which solution meets these requirements?

- A. Use AWS Glue to convert all the files from .csv to a single large Apache Parquet file
- B. COPY the file into Amazon Redshift and query the file with Athena from Amazon S3.
- C. Use Amazon EMR to convert each .csv file to Apache Avro
- D. COPY the files into Amazon Redshift and query the file with Athena from Amazon S3.
- E. Use AWS Glue to convert the files from .csv to a single large Apache ORC file
- F. COPY the file into Amazon Redshift and query the file with Athena from Amazon S3.
- G. Use AWS Glue to convert the files from .csv to Apache Parquet to create 20 Parquet file
- H. COPY the files into Amazon Redshift and query the files with Athena from Amazon S3.

**Answer: D**

#### NEW QUESTION 98

A company is sending historical datasets to Amazon S3 for storage. A data engineer at the company wants to make these datasets available for analysis using Amazon Athena. The engineer also wants to encrypt the Athena query results in an S3 results location by using AWS solutions for encryption. The requirements for encrypting the query results are as follows:

Use custom keys for encryption of the primary dataset query results.

Use generic encryption for all other query results.

Provide an audit trail for the primary dataset queries that shows when the keys were used and by whom. Which solution meets these requirements?

- A. Use server-side encryption with S3 managed encryption keys (SSE-S3) for the primary dataset
- B. Use SSE-S3 for the other datasets.
- C. Use server-side encryption with customer-provided encryption keys (SSE-C) for the primary dataset. Use server-side encryption with S3 managed encryption keys (SSE-S3) for the other datasets.
- D. Use server-side encryption with AWS KMS managed customer master keys (SSE-KMS CMKs) for the primary dataset
- E. Use server-side encryption with S3 managed encryption keys (SSE-S3) for the other datasets.
- F. Use client-side encryption with AWS Key Management Service (AWS KMS) customer managed keys for the primary dataset
- G. Use S3 client-side encryption with client-side keys for the other datasets.

**Answer: A**

#### NEW QUESTION 99

A company has a business unit uploading .csv files to an Amazon S3 bucket. The company's data platform team has set up an AWS Glue crawler to do discovery,

and create tables and schemas. An AWS Glue job writes processed data from the created tables to an Amazon Redshift database. The AWS Glue job handles column mapping and creating the Amazon Redshift table appropriately. When the AWS Glue job is rerun for any reason in a day, duplicate records are introduced into the Amazon Redshift table.

Which solution will update the Redshift table without duplicates when jobs are rerun?

- A. Modify the AWS Glue job to copy the rows into a staging table
- B. Add SQL commands to replace the existing rows in the main table as postactions in the DynamicFrameWriter class.
- C. Load the previously inserted data into a MySQL database in the AWS Glue job
- D. Perform an upsert operation in MySQL, and copy the results to the Amazon Redshift table.
- E. Use Apache Spark's DataFrame dropDuplicates() API to eliminate duplicates and then write the data to Amazon Redshift.
- F. Use the AWS Glue ResolveChoice built-in transform to select the most recent value of the column.

**Answer: A**

**Explanation:**

<https://aws.amazon.com/premiumsupport/knowledge-center/sql-commands-redshift-glue-job/> See the section Merge an Amazon Redshift table in AWS Glue (upsert)

**NEW QUESTION 102**

A company that produces network devices has millions of users. Data is collected from the devices on an hourly basis and stored in an Amazon S3 data lake. The company runs analyses on the last 24 hours of data flow logs for abnormality detection and to troubleshoot and resolve user issues. The company also analyzes historical logs dating back 2 years to discover patterns and look for improvement opportunities.

The data flow logs contain many metrics, such as date, timestamp, source IP, and target IP. There are about 10 billion events every day.

How should this data be stored for optimal performance?

- A. In Apache ORC partitioned by date and sorted by source IP
- B. In compressed .csv partitioned by date and sorted by source IP
- C. In Apache Parquet partitioned by source IP and sorted by date
- D. In compressed nested JSON partitioned by source IP and sorted by date

**Answer: A**

**NEW QUESTION 107**

A manufacturing company has been collecting IoT sensor data from devices on its factory floor for a year and is storing the data in Amazon Redshift for daily analysis. A data analyst has determined that, at an expected ingestion rate of about 2 TB per day, the cluster will be undersized in less than 4 months. A long-term solution is needed. The data analyst has indicated that most queries only reference the most recent 13 months of data, yet there are also quarterly reports that need to query all the data generated from the past 7 years. The chief technology officer (CTO) is concerned about the costs, administrative effort, and performance of a long-term solution.

Which solution should the data analyst use to meet these requirements?

- A. Create a daily job in AWS Glue to UNLOAD records older than 13 months to Amazon S3 and delete those records from Amazon Redshift
- B. Create an external table in Amazon Redshift to point to the S3 location
- C. Use Amazon Redshift Spectrum to join to data that is older than 13 months.
- D. Take a snapshot of the Amazon Redshift cluster
- E. Restore the cluster to a new cluster using dense storage nodes with additional storage capacity.
- F. Execute a CREATE TABLE AS SELECT (CTAS) statement to move records that are older than 13 months to quarterly partitioned data in Amazon Redshift Spectrum backed by Amazon S3.
- G. Unload all the tables in Amazon Redshift to an Amazon S3 bucket using S3 Intelligent-Tiering
- H. Use AWS Glue to crawl the S3 bucket location to create external tables in an AWS Glue Data Catalog
- I. Create an Amazon EMR cluster using Auto Scaling for any daily analytics needs, and use Amazon Athena for the quarterly reports, with both using the same AWS Glue Data Catalog.

**Answer: A**

**NEW QUESTION 110**

A company has an encrypted Amazon Redshift cluster. The company recently enabled Amazon Redshift audit logs and needs to ensure that the audit logs are also encrypted at rest. The logs are retained for 1 year. The auditor queries the logs once a month.

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

- A. Encrypt the Amazon S3 bucket where the logs are stored by using AWS Key Management Service (AWS KMS). Copy the data into the Amazon Redshift cluster from Amazon S3 on a daily basis
- B. Query the data as required.
- C. Disable encryption on the Amazon Redshift cluster, configure audit logging, and encrypt the Amazon Redshift cluster
- D. Use Amazon Redshift Spectrum to query the data as required.
- E. Enable default encryption on the Amazon S3 bucket where the logs are stored by using AES-256 encryption
- F. Copy the data into the Amazon Redshift cluster from Amazon S3 on a daily basis
- G. Query the data as required.
- H. Enable default encryption on the Amazon S3 bucket where the logs are stored by using AES-256 encryption
- I. Use Amazon Redshift Spectrum to query the data as required.

**Answer: A**

**NEW QUESTION 115**

A university intends to use Amazon Kinesis Data Firehose to collect JSON-formatted batches of water quality readings in Amazon S3. The readings are from 50 sensors scattered across a local lake. Students will query the stored data using Amazon Athena to observe changes in a captured metric over time, such as water temperature or acidity. Interest has grown in the study, prompting the university to reconsider how data will be stored.

Which data format and partitioning choices will MOST significantly reduce costs? (Choose two.)

- A. Store the data in Apache Avro format using Snappy compression.

- B. Partition the data by year, month, and day.
- C. Store the data in Apache ORC format using no compression.
- D. Store the data in Apache Parquet format using Snappy compression.
- E. Partition the data by sensor, year, month, and day.

**Answer:** CD

#### NEW QUESTION 119

A company wants to improve user satisfaction for its smart home system by adding more features to its recommendation engine. Each sensor asynchronously pushes its nested JSON data into Amazon Kinesis Data Streams using the Kinesis Producer Library (KPL) in Java. Statistics from a set of failed sensors showed that, when a sensor is malfunctioning, its recorded data is not always sent to the cloud.

The company needs a solution that offers near-real-time analytics on the data from the most updated sensors. Which solution enables the company to meet these requirements?

- A. Set the RecordMaxBufferedTime property of the KPL to "1" to disable the buffering on the sensor side. Use Kinesis Data Analytics to enrich the data based on a company-developed anomaly detection SQL scrip
- B. Push the enriched data to a fleet of Kinesis data streams and enable the data transformation feature to flatten the JSON fil
- C. Instantiate a dense storage Amazon Redshift cluster and use it as the destination for the Kinesis Data Firehose delivery stream.
- D. Update the sensors code to use the PutRecord/PutRecords call from the Kinesis Data Streams API with the AWS SDK for Jav
- E. Use Kinesis Data Analytics to enrich the data based on a company-developed anomaly detection SQL scrip
- F. Direct the output of KDA application to a Kinesis Data Firehose delivery stream, enable the data transformation feature to flatten the JSON file, and set the Kinesis Data Firehose destination to an Amazon Elasticsearch Service cluster.
- G. Set the RecordMaxBufferedTime property of the KPL to "0" to disable the buffering on the sensor side. Connect for each stream a dedicated Kinesis Data Firehose delivery stream and enable the data transformation feature to flatten the JSON file before sending it to an Amazon S3 bucke
- H. Load the S3 data into an Amazon Redshift cluster.
- I. Update the sensors code to use the PutRecord/PutRecords call from the Kinesis Data Streams API withthe AWS SDK for Jav
- J. Use AWS Glue to fetch and process data from the stream using the Kinesis Client Library (KCL). Instantiate an Amazon Elasticsearch Service cluster and use AWS Lambda to directly push data into it.

**Answer:** B

#### Explanation:

<https://docs.aws.amazon.com/streams/latest/dev/developing-producers-with-kpl.html>

The KPL can incur an additional processing delay of up to RecordMaxBufferedTime within the library (user-configurable). Larger values of RecordMaxBufferedTime results in higher packing efficiencies and better performance. Applications that cannot tolerate this additional delay may need to use the AWS SDK directly.

#### NEW QUESTION 123

A company has a marketing department and a finance department. The departments are storing data in Amazon S3 in their own AWS accounts in AWS Organizations. Both departments use AWS Lake Formation to catalog and secure their data. The departments have some databases and tables that share common names.

The marketing department needs to securely access some tables from the finance department. Which two steps are required for this process? (Choose two.)

- A. The finance department grants Lake Formation permissions for the tables to the external account for the marketing department.
- B. The finance department creates cross-account IAM permissions to the table for the marketing department role.
- C. The marketing department creates an IAM role that has permissions to the Lake Formation tables.

**Answer:** AB

#### Explanation:

Granting Lake Formation Permissions Creating an IAM role (AWS CLI)

#### NEW QUESTION 126

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 connecto
- 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 basi
- 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 forma
- H. Query the compressed data.
- I. Run a daily AWS Glue ETL job to compress the data files by using the .lzo forma
- J. Query the compressed data.

**Answer:** BC

#### NEW QUESTION 128

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 131**

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**

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