

1. A Developer created a dashboard for an application using Amazon API Gateway, Amazon S3, AWS Lambda, and Amazon RDS. The Developer needs an authentication mechanism allowing a user to sign in and view the dashboard. It must be accessible from mobile applications, desktops, and tablets, and must remember user preferences across platforms.

Which AWS service should the Developer use to support this authentication scenario?

- A. AWS KMS
- B. Amazon Cognito
- C. AWS Directory Service
- D. Amazon IAM

Ans: B

Explanation:

Cognito user pool provides sign up and sign in functionality along with identity pool which provides temp credentials for using AWS services.

2. A Developer has written a serverless application using multiple AWS services. The business logic is written as a Lambda function which has dependencies on third-party libraries. The Lambda function endpoints will be exposed using Amazon API Gateway. The Lambda function will write the information to Amazon DynamoDB. The Developer is ready to deploy the application but must have the ability to rollback. How can this deployment be automated, based on these requirements?

- A. Deploy using Amazon Lambda API operations to create the Lambda function by providing a deployment package.
- B. Use an AWS CloudFormation template and use CloudFormation syntax to define the Lambda function resource in the template.
- C. Use syntax conforming to the Serverless Application Model in the AWS CloudFormation template to define the Lambda function resource.
- D. Create a bash script which uses AWS CLI to package and deploy the application.

Ans: C

Explanation: AWS CloudFormation enables you to create a template that defines your application's resources and lets you manage the application as a stack. You can more safely add or modify resources in your application stack. If any part of an update fails, AWS CloudFormation automatically rolls back to the previous configuration. With AWS CloudFormation parameters, you can create multiple environments for your application from the same template. AWS SAM extends AWS CloudFormation with a simplified syntax focused on Lambda application development.

3. A Developer has implemented a Lambda function that needs to add new customers to an RDS database that is expected to run hundreds of times per hour. The Lambda function is configured to use 512MB of RAM and is based on the following pseudo code:

```
def lambda_handler(event, context):

    db = database.connect()

    db.statement('INSERT INTO Customers (CustomerName) VALUES
    (context.name)')

    db.close()
```

After testing the Lambda function, the Developer notices that the Lambda execution time is much longer than expected. What should the Developer do to improve performance?

- A. Increase the amount of RAM allocated to the Lambda function, which will increase the number of threads the Lambda can use.
- B. Increase the size of the RDS database to allow for an increased number of database connections each hour.
- C. Move the database connection and close statement out of the handler. Place the connection in the global space.
- D. Replace RDS with Amazon DynamoDB to implement control over the number of writes per second.

Ans: C

Explanation: Define the client connection to the database server outside the AWS Lambda handler function. This makes the database connection available between invocations of the AWS Lambda function for the duration of the lifecycle of the function.

4. A Developer is asked to implement a caching layer in front of Amazon RDS. Cached content is expensive to regenerate in case of service failure. Which implementation below would work while maintaining maximum uptime?

- A. Implement Amazon ElastiCache Redis in Cluster Mode
- B. Install Redis on an Amazon EC2 instance.
- C. Implement Amazon ElastiCache Memcached.
- D. Migrate the database to Amazon Redshift.

Ans: A

Explanation: Redis supports multi AZ and you can use a cluster of them so you don't have failures

5. A company is building a stock trading application that requires sub-millisecond latency in processing trading requests. Amazon DynamoDB is used to store all the trading data that is used to process each request. After load testing the application, the development team found that due to data retrieval times, the latency requirement is not satisfied. Because of sudden high spikes in the number of requests, DynamoDB read capacity has to be significantly over-provisioned to avoid throttling. What steps should be taken to meet latency requirements and reduce the cost of running the application?

- A. Add Global Secondary Indexes for trading data.

- B. Store trading data in Amazon S3 and use Transfer Acceleration.
- C. Add retries with exponential back-off for DynamoDB queries
- D. Use DynamoDB Accelerator to cache trading data.

Ans: D

Explanation: DAX provides access to eventually consistent data from DynamoDB tables, with microsecond latency. A Multi-AZ DAX cluster can serve millions of requests per second. DAX is ideal for the following types of applications: Applications that require the fastest possible response time for reads. Some examples include real-time bidding, social gaming, and trading applications. DAX delivers fast, in-memory read performance for these use cases.

6. An application reads data from an Amazon DynamoDB table. Several times a day, for a period of 15 seconds, the application receives multiple errors.

ProvisionedThroughputExceeded -
How should this exception be handled?

- A. Create a new global secondary index for the table to help with the additional requests.
- B. Retry the failed read requests with exponential backoff.
- C. Immediately retry the failed read requests.
- D. Use the DynamoDB "UpdateItem" API to increase the provisioned throughput capacity of the table.

Ans: B

Explanation: Retry the failed read requests with exponential backoff.
<https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Programming.Errors.html> (...) Your request rate is too high. The AWS SDKs for DynamoDB automatically retry requests that receive this exception. Your request is eventually successful, unless your retry queue is too large to finish. Reduce the frequency of requests using Error Retries and Exponential Backoff.

7. A company wants to implement a continuous integration for its workloads on AWS. The company wants to trigger unit test in its pipeline for commits-on its code repository, and wants to be notified of failure events in the pipeline. How can these requirements be met?

- A. Store the source code in AWS CodeCommit. Create a CodePipeline to automate unit testing. Use Amazon SNS to trigger notifications of failure events.
- B. Store the source code in GitHub. Create a CodePipeline to automate unit testing. Use Amazon SES to trigger notifications of failure events.
- C. Store the source code on GitHub. Create a CodePipeline to automate unit testing. Use Amazon CloudWatch to trigger notifications of failure events.
- D. Store the source code in AWS CodeCommit. Create a CodePipeline to automate unit testing. Use Amazon CloudWatch to trigger notification of failure events.

Ans: D

8. A serverless application uses an API Gateway and AWS Lambda. Where should the Lambda function store its session information across function calls?

- A. In an Amazon DynamoDB table
- B. In an Amazon SQS queue
- C. In the local filesystem
- D. In an SQLite session table using `""DSQLITE_ENABLE_SESSION A`

Ans: A

9. A Developer has an application that can upload tens of thousands of objects per second to Amazon S3 in parallel within a single AWS account. As part of new requirements, data stored in S3 must use server side encryption with AWS KMS (SSE-KMS). After creating this change, performance of the application is slower. Which of the following is MOST likely the cause of the application latency?

- A. Amazon S3 throttles the rate at which uploaded objects can be encrypted using Customer Master Keys.
- B. The AWS KMS API calls limit is less than needed to achieve the desired performance.
- C. The client encryption of the objects is using a poor algorithm.
- D. KMS requires that an alias be used to create an independent display name that can be mapped to a CMK.

Ans: B

Ex: The AWS KMS API calls limit is less than needed to achieve the desired performance. <https://aws.amazon.com/about-aws/whats-new/2018/08/aws-key-management-service-increases-api-requests-per-second-limits/> KMS API access limit is 10k/sec in us-east and some others and 5.5k/sec for the rest of the regions. Client can request this limit to be changed.

10. A company is migrating its on-premises database to Amazon RDS for MySQL. The company has read-heavy workloads, and wants to make sure it re-factors its code to achieve optimum read performance for its queries. How can this objective be met?

- A. Add database retries to effectively use RDS with vertical scaling
- B. Use RDS with multi-AZ deployment
- C. Add a connection string to use an RDS read replica for read queries
- D. Add a connection string to use a read replica on an EC2 instance

Ans: C

11. A Developer is writing a Linux-based application to run on AWS Elastic Beanstalk. Application requirements state that the application must maintain full capacity during updates while minimizing cost. Which type of Elastic Beanstalk deployment policy should the Developer specify for the environment?

- A. Immutable
- B. Rolling
- C. All at Once
- D. Rolling with additional batch

Ans: Read more on the link:

<https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.rolling-version-deploy.html> > To maintain full capacity during deployments, you can configure your environment to launch a new batch of instances before taking any instances out of service. This option is known as a rolling deployment with an additional batch. When the deployment completes, Elastic Beanstalk terminates the additional batch of instances.

12. A Developer is creating an application that needs to locate the public IPv4 address of the Amazon EC2 instance on which it runs. How can the application locate this information?

- A. Get the instance metadata by retrieving `http://169.254.169.254/latest/metadata/`.
- B. Get the instance user data by retrieving `http://169.254.169.254/latest/userdata/`.
- C. Get the application to run `IFCONFIG` to get the public IP address.
- D. Get the application to run `IPCONFIG` to get the public IP address.

Ans: A

Ex: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-instance-metadata.html>

13. An application will ingest data at a very high throughput from many sources and must store the data in an Amazon S3 bucket. Which service would BEST accomplish this task?

- A. Amazon Kinesis Firehose
- B. Amazon S3 Acceleration Transfer
- C. Amazon SQS
- D. Amazon SNS

Ans: A

14. A static website is hosted in an Amazon S3 bucket. Several HTML pages on the site use JavaScript to download images from another Amazon S3 bucket. These images are not displayed when users browse the site. What is the possible cause for the issue?

- A. The referenced Amazon S3 bucket is in another region.
- B. The images must be stored in the same Amazon S3 bucket.
- C. Port 80 must be opened on the security group in which the Amazon S3 bucket is located.
- D. Cross Origin Resource Sharing must be enabled on the Amazon S3 bucket.

Ans: D

15. A company is migrating an on-premises application to AWS. The application currently uses their corporate message broker, passing messages between layers by using the MQTT protocol. Because of time and budget constraints, the company cannot rewrite the application and cannot manage a new message broker on the EC2 instances. Which service should a Developer use to allow the customer to migrate the application to AWS?

Mark only one oval.

- Amazon SNS
- Amazon SQS
- Amazon MQ

- Amazon SWF

Ans: C.

Amazon MQ is a managed message broker service for Apache ActiveMQ that makes it easy to set up and operate message brokers in the cloud. Message brokers allow different software systems—often using different programming languages, and on different platforms—to communicate and exchange information. With Amazon MQ, you can use industry standard APIs and protocols for messaging, including JMS, NMS, AMQP, STOMP, MQTT, and WebSocket. You can easily move from any message broker that uses these standards to Amazon MQ because you don't have to rewrite any messaging code in your applications

16. You installed sensors to track the number of visitors that goes to the park. The data is sent

every day to an Amazon Kinesis stream with default settings for processing, in which a consumer is configured to process the data every other day. You noticed that your S3 bucket is not receiving all of the data that is being sent to the Kinesis stream. You checked the sensors if they are properly sending the data to Amazon Kinesis and verified that the data is indeed sent every day.

What could be the reason for this?

Mark only one oval.

- There is a problem in the sensors.
- By Default, S3 stores data for 1 day and moves it to Amazon Glacier
- Your AWS Account was hacked and someone has deleted data in stream
- By default, data records are accessible for only 24 hours

Ans: D.

The time period from when a record is added to when it is no longer accessible is called the retention period. A Kinesis data stream stores records from 24 hours by default to a maximum of 168 hours. This is the reason why there is missing data in your S3 bucket. To fix this, you can either configure your sensors to send the data everyday instead of every other day or alternatively, you can increase the retention period of your Kinesis data stream. Glacier is used to store archival data, so B is the right answer

17. A photo-sharing website running on AWS allows users to generate thumbnail images of photos stored in Amazon S3. An Amazon DynamoDB table maintains the locations of photos, and thumbnails are easily re-created from the originals if they are accidentally deleted. How should the thumbnail images be stored to ensure the LOWEST cost?

Mark only one oval.

- Amazon S3 Standard-Infrequent Access (S3 Standard-IA) with cross-region replication
- Amazon S3
- Amazon Glacier
- Amazon S3 with cross-region replication

Ans: B.

We can rule out A + D based on the fact the thumbnails can be 'easily recreated' and that cross-region replication incurs transfer costs and having to pay twice for the data. Even with the S3-IA tier, this is more costly than storing once for the S3-Standard Tier. Glacier is used to store archival data, so B is the right answer.

18. A company is implementing a data lake solution on Amazon S3. Its security policy mandates that the data stored in Amazon S3 should be encrypted at rest. Which options can achieve this? (Select TWO.)

Tick all that apply.

- Use S3 server-side encryption with an Amazon EC2 key pair.
- Use S3 server-side encryption with customer-provided keys (SSE-C).
- Use S3 bucket policies to restrict access to the data at rest.
- Use client-side encryption before ingesting the data to Amazon S3 using encryption keys.
- Use SSL to encrypt the data while in transit to Amazon S3.

Ans: B, D

Ans: Since Data is to be encrypted at rest, we will go with options B and D to use server-side encryption with customer-provided keys (SSE-C) and client side encryption which means encrypting data before uploading it to the AWS Cloud.

19. An application provides a feature that allows users to securely download private and personal files. The web server is currently overwhelmed with serving files for download. A Developer must find a more effective solution to reduce web server load and costs and must allow users to download only their own files. Which solution meets all requirements?

Mark only one oval.

- Store the files securely on Amazon S3 and have the application generate an Amazon S3 pre-signed URL for the user to download.
- Store the files in an encrypted Amazon EBS volume and use a separate set of servers to serve the downloads.
- Have the application encrypt the files and store them in the local Amazon EC2 Instance Store prior to serving them up for download.
- Create an Amazon CloudFront distribution to distribute and cache the files.

Ans: A. Pre-signed URLs allow private access and downloading their own files.

20. An organization uses Amazon S3 to store video content served via its website. It only has rights to deliver this content to users within its own country and needs to restrict access. How can the organization ensure that these files are only accessible from within its country?

Mark only one oval.

- Use a custom Amazon S3 bucket policy to allow access only to users inside the organization's country
- Use Amazon CloudFront and Geo Restriction to allow access only to users inside the organization's country
- Use an Amazon S3 bucket ACL to allow access only to users inside the organization's country
- Use file-based ACL permissions on each video file to allow access only to users inside the organization's country

Ans: B.

When a user requests your content, CloudFront typically serves the requested content regardless of where the user is located. If you need to prevent users in specific countries from accessing your content, you can use the CloudFront geo restriction feature to do one of the following.

21. A company is storing data in an Amazon DynamoDB table and needs to take daily backups and retain them for 6 months. How should the Developer meet these requirements without impacting the production workload?

Mark only one oval.

- Use DynamoDB replication and restore the table from the replica
- Use AWS Data Pipeline and create a scheduled job to back up the DynamoDB table daily
- Use Amazon CloudWatch Events to trigger an AWS Lambda function that makes an on-demand backup of the table
- Use AWS Batch to create a scheduled backup with the default template, then back up to Amazon S3 daily.

Ans: C. With On-Demand Backup, you can initiate a backup process on your own, but what if you want to schedule backups? Adding the power of serverless computing, you can create an AWS Lambda function that complements On-Demand Backup with the ability to set a schedule

22. A company is storing application data in Amazon S3 buckets across multiple AWS regions. Company policy requires that encryption keys be generated at the company headquarters, but the encryption keys may be stored in AWS after generation. The Developer plans to configure cross-region replication. Which solution will encrypt the data while requiring the LEAST amount of operational overhead?

Mark only one oval.

- Configure the applications to write to an S3 bucket using client-side encryption
- Configure S3 buckets to encrypt using AES-256
- Configure S3 object encryption using AWS CLI with Server-Side Encryption with AWS KMS Managed Keys (SSE-KMS)

- Configure S3 buckets to use Server-Side Encryption with AWS KMS-Managed Keys (SSE-KMS) with imported key material in both regions

Ans: D.

You can choose a customer managed CMK that you create and manage or an AWS managed CMK that Amazon S3 creates in your AWS account and manages for you. Like a customer managed CMK, your AWS CMK is unique to your AWS account and Region. Only Amazon S3 has permission to use this CMK on your behalf.

23. A company has an application that generates invoices and makes the invoices available online. Invoices are stored as PDFs in an Amazon S3 bucket. Customers typically only view each invoice during the month it is issued. However, past invoices need to be immediately available. There are concerns over rising storage costs as the company gains more customers. What is the MOST cost-effective method to store the data?

Mark only one oval.

- A. Use Amazon S3 for current invoices. Set up lifecycle rules to migrate invoices to the GLACIER storage class after 30 days.
- B. Store the invoices as text files. Use Amazon CloudFront to convert the invoices from text to PDF when customers download invoices.
- C. Store the invoices as binaries in an Amazon RDS database instance. Retrieve them from the database when customers request invoices.
- D. Use Amazon S3 for current invoices. Set up lifecycle rules to migrate invoices to Amazon S3 Standard Infrequent Access (S3 Standard-IA) after 30 days.

Ans: D.

Use Amazon S3 for current invoices. Set up lifecycle rules to migrate invoices to Amazon S3 Standard-Infrequent Access (S3 Standard-IA) after 30 days.

24. An organization runs an online media site, hosted on-premises. An employee posted a product review that contained videos and pictures. The review went viral and the organization needs to handle the resulting spike in website traffic. What action would provide an immediate solution?

- A. Redesign the website to use Amazon API Gateway and use AWS Lambda to deliver content.
- B. Add server instances using Amazon EC2 and use Amazon Route 53 with a failover routing policy.
- C. Serve the images and videos via an Amazon CloudFront distribution created using the news site as the origin.
- D. Use Amazon ElasticCache for Redis for caching and reducing the load requests from the origin.

Ans: CloudFront will give an immediate solution by copying the data to edge locations across the world.

25. A Developer is designing a new workload where an AWS Lambda function will access an Amazon DynamoDB table. What is the MOST secure means of granting the Lambda function access to the DynamoDB table?

Mark only one oval.

- A. Create an identity and access management (IAM) role with the necessary permissions to access the DynamoDB table and assign the role to the Lambda function.
- B. Create a DynamoDB username and password and give them to the Developer to use in the Lambda function.
- C. Create an identity and access management (IAM) user and create access and secret keys for the user. Give the user the necessary permissions to access the DynamoDB table. Have the Developer use these keys to access the resources.
- D. Create an identity and access management (IAM) role allowing access from AWS Lambda and assign the role to the DynamoDB table.

Ans: A.

It is inadvisable to use user/passwords in the code. IAM roles allow you to delegate access with defined permissions to trusted entities without having to share long-term access keys.

26. A company wants to improve latency by hosting images within a public Amazon S3 bucket fronted by an Amazon CloudFront distribution. The company wants to restrict access to the S3 bucket to include the CloudFront distribution only, while also allowing CloudFront to continue proper functionality. What should be done after making the bucket private to restrict access with the LEAST operational overhead?

Mark only one oval.

Create a CloudFront origin access identity and create a security group that allows access from CloudFront.

Create a CloudFront origin access identity and update the bucket policy to grant access to it.

Create a bucket policy restricting all access to the bucket to include CloudFront IPs only

Enable the CloudFront option to restrict viewer access and update the bucket policy to allow the distribution.

Ans: To allow access to your Amazon S3 bucket only from a CloudFront distribution, first add an origin access identity (OAI) to your distribution. Then, review your bucket policy and Amazon S3 access control list (ACL) to be sure that:

Only the OAI can access your bucket.

CloudFront can access the bucket on behalf of requesters.

Users can't access the objects in other ways, such as by using Amazon S3 URLs.

27. How can a user track memory usage in an EC2 instance?

Mark only one oval.

- A. Call Amazon CloudWatch to retrieve the memory usage metric data that exists for the EC2 instance.
- B. Assign an IAM role to the EC2 instance with an IAM policy granting access to the desired metric.
- C. Use an instance type that supports memory usage reporting to a metric by default.
- D. Place an agent on the EC2 instance to push memory usage to an Amazon CloudWatch custom metric.

Ans: D.

Since memory utilization is a custom metric, you need to have an agent to send the data across to CloudWatch.

28. An e-commerce application places orders in an Amazon SQS queue. When a message is received, Amazon EC2 worker instances process the request. The EC2 instances are in an Auto Scaling group. How should the Developer be designed to scale up and down with the LEAST amount of operational overhead?

Mark only one oval.

- A. Use an Amazon CloudWatch alarm on the EC2 CPU to scale the Auto Scaling group up and down
- B. Use an EC2 Auto Scaling health check for messages processed on the EC2 instances to scale up and down.
- C. Use an Amazon CloudWatch alarm based on the number of visible messages to scale the Auto Scaling group up or down.
- D. Use an Amazon CloudWatch alarm based on the CPU to scale the Auto Scaling group up or down.

Ans: C

Ans: Each SQS queue reports a number of metrics to CloudWatch at five-minute intervals, including ApproximateNumberOfMessagesVisible.

29. A company wants to run a static website served through Amazon CloudFront. What is an advantage of storing the website content in an S3 bucket instead of an EBS volume?

Mark only one oval.

- A. S3 buckets are replicated globally, allowing for large scalability. EBS volumes are replicated only within a region.
- B. S3 is an origin for CloudFront. EBS volumes would need EC2 instances behind an Elastic Load Balancing load balancer to be an origin.
- D. S3 buckets can be encrypted, allowing for secure storage of the web files. EBS volumes cannot be encrypted.
- E. S3 buckets support object-level read throttling, preventing abuse. EBS volumes do not provide object-level throttling.

Ans: B

S3 is an origin for CloudFront. EBS volumes would need EC2 instances behind an Elastic Load Balancing load balancer to be an origin.

30. A company uses AWS Elastic Beanstalk to deploy a web application running on m4. large instances. Users are reporting high latency and failed requests. Further investigation reveals that the EC2 instances are running at or near 100% CPU utilization. What should a Developer do to address the performance issues?

Mark only one oval.

- A. Use time-based scaling to scale the number of instances based on periods of high load.
- B. Modify the scaling triggers in Elastic Beanstalk to use the CPU Utilization metric.
- C. Swap the m4. large instances with the c4. large instance type.
- D. Create an additional Auto Scaling group and configure Amazon EBS to use both Auto Scaling groups to increase the scaling capacity.

Ans: B.

Elastic Beanstalk automatically scales your application up and down based on your application's specific need using easily adjustable Auto Scaling settings. For example, you can use CPU utilization metrics to trigger Auto Scaling actions. With Elastic Beanstalk, your application can handle peaks in workload or traffic while minimizing your costs.

31. A company is rolling out a new web service but is unsure how many customers the service will attract. However, the company is unwilling to accept any downtime. What could a Developer recommend to the company in order to keep track of customers' current session data?

Mark only one oval.

- A. Amazon EC2
- B. Amazon RDS
- C. AWS CloudTrail
- D. Amazon DynamoDB

Ans: D

Explanation: Session state data without downtime can be stored in Amazon DynamoDB.

32. You are working as a Cloud Consultant for a government agency with a mandate of improving traffic planning, maintenance of roadways and preventing accidents. There is a need to manage traffic infrastructure in real time, alert traffic engineers and emergency response teams when problems are detected, and automatically change traffic signals to get emergency personnel to accident scenes faster by using sensors and smart devices. Which AWS service will allow the developers of the agency to connect the said devices to your cloud-based applications?

Mark only one oval.

- A. CloudFormation
- B. Elastic Beanstalk
- C. AWS IoT
- D. Core Container Service

Ans: C.

AWS IoT Core is a managed cloud service that lets connected devices easily and securely interact with cloud applications and other devices.

33. A restaurant reservation application needs the ability to maintain a waiting list. When a customer tries to reserve a table, and none are available, the customer must be put on the waiting list, and the application must notify the customer when a table becomes free. What service should the Developer recommend to ensure that the system respects the order in which the customer requests are put onto the waiting list?

Mark only one oval.

- A. SNS
- B. Lambda with sequential dispatch
- C. FIFO queue in SQS

D. Standard SQS

Ans: C.

FIFO (First-In-First-Out) queues are designed to enhance messaging between applications operations and events is critical, or where duplicates can't be tolerated. The order in which messages are sent and received is strictly preserved and a message is delivered once and remains available until a consumer processes and deletes it.

34. An application runs on Amazon EC2 instances in an Auto Scaling group. When instances are terminated, the Systems Operations team cannot determine the root cause, because the logs reside on the terminated instances and are lost. How can the root cause be determined?

Mark only one oval.

- A. Use ephemeral volumes to store the log files.
- B. Use a scheduled Amazon CloudWatch Event to take regular Amazon EBS snapshots.
- C. Use an Amazon CloudWatch agent to push the logs to Amazon CloudWatch Logs.
- D. Use AWS CloudTrail to pull the logs from the Amazon EC2 instances.

Ans: C

35. You have a set of Linux servers running on multiple On-Demand EC2 Instances. The Audit team wants to collect and process the application log files generated from these servers for their report. Which of the following services is the best to use in this case?

Mark only one oval.

- A. EMR
- B. Glacier
- C. EC2
- D. Redshift

Ans: A.

Amazon EMR is a managed cluster platform that simplifies running big data frameworks, such as Apache Hadoop and Apache Spark, on AWS to process and analyze vast amounts of data.

36. An application is using a RESTful API hosted in AWS which uses Amazon API Gateway and AWS Lambda. There is a requirement to trace and analyze user requests as they travel through your Amazon API Gateway APIs to the underlying services. Which of the following is the most suitable service to use to meet this requirement?

Mark only one oval.

- A. VPC
- B. Flow Logs
- C. CloudWatch
- D. CloudTrail
- E. X-Ray

Ans: D.

You can use AWS X-Ray to trace and analyze user requests as they travel through your Amazon API Gateway APIs to the underlying services. API Gateway supports AWS X-Ray tracing for all API Gateway endpoint types: regional, edge-optimized, and private. You can use AWS X-Ray with Amazon API Gateway in all regions where X-Ray is available.

37. You are planning to reduce the amount of data that Amazon S3 transfers to your servers in order to lower your operating costs as well as to lower the latency of retrieving the data. To accomplish this, you need to use simple structured query language (SQL) statements to filter the contents of Amazon S3 objects and retrieve just the subset of data that you need. Which of the following services will help you accomplish this requirement?

Mark only one oval.

- A. RDS
- B. Redshift Spectrum
- C. S3 Select
- D. AWS Step Functions

Ans: C.

With Amazon S3 Select, you can use simple structured query language (SQL) statements to filter the contents of Amazon S3 objects and retrieve just the subset of data that you need. By using Amazon S3 Select to filter this data, you can reduce the amount of data that Amazon S3 transfers, which reduces the cost and latency to retrieve this data.

38. A company is looking for a fully-managed solution to store its players' state information for a rapidly growing game. The application runs on multiple Amazon EC2 nodes, which can scale according to the incoming traffic. The request can be routed to any of the nodes, therefore, the state information must be stored in a centralized database. The players' state information needs to be read with strong consistency and needs conditional updates for any changes.

Which service would be MOST cost-effective, and scale seamlessly?

- A. Amazon S3
- B. Amazon DynamoDB
- C. Amazon RDS
- D. Amazon Redshift

Ans: B

DynamoDB lets you store data centrally with strongly consistent reads and automatic updates as it is a managed service.

39. A Developer is deploying a new production MySQL database on AWS. It is critical that the database is highly available.

What should the Developer do to achieve this goal with Amazon RDS?

- A. Create a read replica of the primary database and deploy it in a different AWS Region.
- B. Enable multi-AZ to create a standby database in a different Availability Zone.
- C. Enable multi-AZ to create a standby database in a different AWS Region.
- D. Create a read replica of the primary database and deploy it in a different Availability Zone.

Ans: B. Multi-AZ creates a standby instance in different AZ in the same region making the solution highly available.

40. An organization is deploying Amazon ElastiCache for Redis and requires password protection to improve their data security posture.

Which solution should a Developer recommend?

- A. Redis Auth
- B. AWS Single Sign-On
- C. IAM database authentication
- D. VPC security group for Redis

Ans: A. Redis Auth provides password protection for ElastiCache clusters.

41. A Developer is designing a ride-sharing application. The application needs

consistent and single-digit millisecond latency. In addition, the application must integrate with a highly scalable and fully managed database service to track GPS coordinates and user data for all rides.

Which database service should the Developer use to meet these performance requirements?

- A. Amazon RDS
- B. Amazon Redshift
- C. Amazon DynamoDB
- D. Amazon Aurora

Ans: C. DynamoDB gives you single digit millisecond latency.

42. When designing an Amazon SQS message-processing solution, messages in the queue must be processed before the maximum retention time has elapsed.

Which actions will meet this requirement? (Choose two.)

- A. Use AWS STS to process the messages
- B. Use Amazon EBS-optimized Amazon EC2 instances to process the messages
- C. Use Amazon EC2 instances in an Auto Scaling group with scaling triggered based on the queue length
- D. Increase the SQS queue attribute for the message retention period
- E. Convert the SQS queue to a first-in first-out (FIFO) queue

Ans: B and D. EBS optimized instances give better performance for processing. Auto Scaling group will still take time to launch instances which will cause delay in processing. Storing the messages for a longer time will again give more time for processing.

43. A company hosts a website using Amazon API Gateway on the front end.

Recently, there has been heavy traffic on the website and the company wants to control access by allowing authenticated traffic only.

How should the company limit access to authenticated users only? (Select TWO.)

- A. Allow users that are authenticated through Amazon Cognito.
- B. Limit traffic through API Gateway.
- C. Allow X.509 certificates to authenticate traffic.
- D. Deploy AWS KMS to identify users.
- E. Assign permissions in AWS IAM to allow users.

Ans: A, B

EX: Cognito will handle authentication and IAM users will give appropriate permissions to limit the access.

44.

A company is running a series of national TV campaigns. These 30-second advertisements will introduce sudden traffic peaks targeted at a Node.js application. The company expects traffic to increase from five requests each minute to more than 5,000 requests each minute.

Which AWS service should a Developer use to ensure traffic surges can be

handled?

- A. AWS Lambda
- B. Amazon ElastiCache
- C. Size EC2 instances to handle peak load
- D. An Auto Scaling group for EC2 instances

Ans: A. Only Lambda can actually handle traffic surges immediately by running parallel functions. The only thing you need to do is to raise a support ticket to increase the concurrent execution limit of Lambda functions.

45. An application is scanning an Amazon DynamoDB table that was created with default settings. The application occasionally reads stale data when it queries the table.

How can this issue be corrected?

- A. Increase the provisioned read capacity of the table.
- B. Enable AutoScaling on the DynamoDB table.
- C. Update the application to use strongly consistent reads.
- D. Re-create the DynamoDB table with eventual consistency disabled.

Ans: C. Strongly consistent reads will return updated data within a second.

46. A company has an application that uses Amazon CloudFront for content that is hosted on an Amazon S3 bucket. After an unexpected refresh, the users are still seeing old content.

Which step should the Developer take to ensure that new content is displayed?

- A. Perform a cache refresh on the CloudFront distribution that is serving the content.
- B. Perform an invalidation on the CloudFront distribution that is serving the content.
- C. Create a new cache behavior path with the updated content.
- D. Change the TTL value for removing the old objects.

Ans: D . we need to update all of the content to ensure that we do not have any stale data served from S3.

47. You have created REST API using API Gateway. Which of the following mechanism can be used to deny specific IP Addresses from accessing API Gateway. Select 2 correct options.

A. AWS KMS

B. Security center

C. WAF

D. Resource Policies

Ans: C, D

Ex: WAF protects from attacks.

You can use Resource Policies to deny access.

<https://docs.aws.amazon.com/apigateway/latest/developerguide/apigateway-resource-policies.html>

48. When a failure occurs during stack creation in CloudFormation, does a rollback occur?

A. True

B. False

Answer: A

Explanation: By default, the “automatic rollback on error” feature is enabled. It causes AWS CloudFormation to be created successfully for a stack until the point of error is deleted. This is useful when the default limit for Elastic IP addresses is exceeded accidentally, or you can’t access an EC2 AMI you want to run.

This feature makes you depend on the fact that stacks may either be fully created or not at all. It simplifies the layered solutions system administration built on the top of the AWS CloudFormation.

49. An IT admin has enabled long polling in their SQS queue. What must be done for long polling to be enabled in SQS? Choose the correct answer from the options below

A. Create a dead letter queue

B. Set the message size to 256KB

C. Set the ReceiveMessageWaitTimeSeconds property of the queue to 0 seconds

D. Set the ReceiveMessageWaitTimeSeconds property of the queue to 20 seconds

Answer: D

Explanation: Amazon SQS long polling is a method of retrieval of messages from SQS queues. It returns a response only when a message arrives in the message queue instead of short polling where the response returns immediately even when the message is empty.

As the messages are available, the retrieval of messages from Amazon SQS becomes inexpensive due to long polling. It may also reduce the cost of using SQS as it can reduce the empty receipts.

For more information on Long polling, please refer to the link:

<http://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/sqs-long-polling.html>

50. A developer is migrating an on-premises application to the AWS Cloud. The application currently uses Microsoft SQL encrypting some of the data using TDE. Which service should the Developer use to minimize code changes?

- A. RDS
- B. Aurora
- C. Redshift
- D. Amazon DynamoDB

Ans : A

RDS Supports TDE for Microsoft SQL server.