

# Amazon-Web-Services

## Exam Questions SAA-C02

AWS Certified Solutions Architect - Associate (SAA-C02)



**NEW QUESTION 1**

A company's application runs on Amazon EC2 instances behind an Application Load Balancer (ALB). The instances run in an Amazon EC2 Auto Scaling group across multiple Availability Zones. On the first day of every month at midnight, the application becomes much slower when the month-end financial calculation batch executes. This causes the CPU utilization of the EC2 instances to immediately peak to 100%, which disrupts the application. What should a solutions architect recommend to ensure the application is able to handle the workload and avoid downtime?

- A. Configure an Amazon CloudFront distribution in front of the ALB.
- B. Configure an EC2 Auto Scaling simple scaling policy based on CPU utilization.
- C. Configure an EC2 Auto Scaling scheduled scaling policy based on the monthly schedule.
- D. Configure Amazon ElastiCache to remove some of the workload from the EC2 instances.

**Answer: C**

**NEW QUESTION 2**

A solutions architect is designing a solution where users will be directed to a backup static error page if the primary website is unavailable. The primary website's DNS records are hosted in Amazon Route 53, where their domain is pointing to an Application Load Balancer (ALB). Which configuration should the solutions architect use to meet the company's needs while minimizing changes and infrastructure overhead?

- A. Point a Route 53 alias record to an Amazon CloudFront distribution with the ALB as one of its origins. Then, create custom error pages for the distribution.
- B. Set up a Route 53 active-passive failover configuration. Direct traffic to a static error page hosted within an Amazon S3 bucket when Route 53 health checks determine that the ALB endpoint is unhealthy.
- C. Update the Route 53 record to use a latency-based routing policy. Add the backup static error page hosted within an Amazon S3 bucket to the record so the traffic is sent to the most responsive endpoints.
- D. Set up a Route 53 active-active configuration with the ALB and an Amazon EC2 instance hosting a static error page as endpoints. Route 53 will only send requests to the instance if the health checks fail for the ALB.

**Answer: B**

**NEW QUESTION 3**

A company's website runs on Amazon EC2 instances behind an Application Load Balancer (ALB). The website has a mix of dynamic and static content. Users around the globe are reporting that the website is slow. Which set of actions will improve website performance for users worldwide?

- A. Create an Amazon CloudFront distribution and configure the ALB as an origin. Then update the Amazon Route 53 record to point to the CloudFront distribution.
- B. Create a latency-based Amazon Route 53 record for the ALB. Then launch new EC2 instances with larger instance sizes and register the instances with the ALB.
- C. Launch new EC2 instances.
- D. EC2 instances hosting the same web application in different Regions closer to the users. Then register the instances with the same ALB using cross-Region VPC peering.
- E. Host the website in an Amazon S3 bucket in the Regions closest to the users and delete the ALB and EC2 instances. Then update an Amazon Route 53 record to point to the S3 buckets.

**Answer: A**

**NEW QUESTION 4**

A manufacturing company wants to implement predictive maintenance on its machinery equipment. The company will install thousands of IoT sensors that will send data to AWS in real time. A solutions architect is tasked with implementing a solution that will receive events in an ordered manner for each machinery asset and ensure that data is saved for further processing at a later time. Which solution would be MOST efficient?

- A. Use Amazon Kinesis Data Streams for real-time events with a partition for each equipment asset. Use Amazon Kinesis Data Firehose to save data to Amazon S3.
- B. Use Amazon Kinesis Data Streams for real-time events with a shard for each equipment asset. Use Amazon Kinesis Data Firehose to save data to Amazon EBS.
- C. Use an Amazon SQS FIFO queue for real-time events with one queue for each equipment asset. Trigger an AWS Lambda function for the SQS queue to save data to Amazon EFS.
- D. Use an Amazon SQS standard queue for real-time events with one queue for each equipment asset. Trigger an AWS Lambda function from the SQS queue to save data to Amazon S3.

**Answer: A**

**NEW QUESTION 5**

A company's website is using an Amazon RDS MySQL Multi-AZ DB instance for its transactional data storage. There are other internal systems that query this DB instance to fetch data for internal batch processing. The RDS DB instance slows down significantly the internal systems' fetch data. This impacts the website's read and write performance, and the users experience slow response times. Which solution will improve the website's performance?

- A. Use an RDS PostgreSQL DB instance instead of a MySQL database.
- B. Use Amazon ElastiCache to cache the query responses for the website.
- C. Add an additional Availability Zone to the current RDS MySQL Multi-AZ DB instance.
- D. Add a read replica to the RDS DB instance and configure the internal systems to query the read replica.

**Answer: D**

**NEW QUESTION 6**

A company is planning to migrate a business-critical dataset to Amazon S3. The current solution design uses a single S3 bucket in the us-east-1 Region with versioning enabled to store the dataset. The company's disaster recovery policy states that all data must be in multiple AWS Regions. How should a solutions architect design the S3 solution?

- A. Create an additional S3 bucket in another Region and configure cross-Region replication.
- B. Create an additional S3 bucket in another Region and configure cross-origin resource sharing (CORS).
- C. Create an additional S3 bucket with versioning in another Region and configure cross-Region replication.
- D. Create an additional S3 bucket with versioning in another Region and configure cross-origin resource (CORS).

**Answer:** C

#### NEW QUESTION 7

A security team wants to limit access to specific services or actions in all of the team's AWS accounts. All accounts belong to a large organization in AWS Organizations. The solution must be scalable and there must be a single point where permissions can be maintained. What should a solutions architect do to accomplish this?

- A. Create an ACL to provide access to the services or actions.
- B. Create a security group to allow accounts and attach it to user groups.
- C. Create cross-account roles in each account to deny access to the services or actions.
- D. Create a service control policy in the root organizational unit to deny access to the services or actions.

**Answer:** D

#### NEW QUESTION 8

An application runs on Amazon EC2 instances across multiple Availability Zones. The instances run in an Amazon EC2 Auto Scaling group behind an Application Load Balancer. The application performs best when the CPU utilization of the EC2 instances is at or near 40%. What should a solutions architect do to maintain the desired performance across all instances in the group?

- A. Use a simple scaling policy to dynamically scale the Auto Scaling group.
- B. Use a target tracking policy to dynamically scale the Auto Scaling group.
- C. Use an AWS Lambda function to update the desired Auto Scaling group capacity.
- D. Use scheduled scaling actions to scale up and scale down the Auto Scaling group.

**Answer:** D

#### NEW QUESTION 9

A company's web application uses an Amazon RDS PostgreSQL DB instance to store its application data. During the financial closing period at the start of every month, accountants run large queries that impact the database's performance due to high usage. The company wants to minimize the impact that the reporting activity has on the web application. What should a solutions architect do to reduce the impact on the database with the LEAST amount of effort?

- A. Create a read replica and direct reporting traffic to the replica.
- B. Create a Multi-AZ database and direct reporting traffic to the standby.
- C. Create a cross-Region read replica and direct reporting traffic to the replica.
- D. Create an Amazon Redshift database and direct reporting traffic to the Amazon Redshift database.

**Answer:** B

#### NEW QUESTION 10

A company has an application running on Amazon EC2 instances in a VPC. One of the applications needs to call an Amazon S3 API to store and read objects. The company's security policies restrict any internet-bound traffic from the applications. Which action will fulfill these requirements and maintain security?

- A. Configure an S3 interface endpoint.
- B. Configure an S3 gateway endpoint.
- C. Create an S3 bucket in a private subnet.
- D. Create an S3 bucket in the same Region as the EC2 instance.

**Answer:** C

#### NEW QUESTION 10

A company must generate sales reports at the beginning of every month. The reporting process launches 20 Amazon EC2 instances on the first of the month. The process runs for 7 days and cannot be interrupted. The company wants to minimize costs. Which pricing model should the company choose?

- A. Reserved Instances
- B. Spot Block Instances
- C. On-Demand Instances
- D. Scheduled Reserved Instances D18912E1457D5D1DDCB40AB3BF70D5D

**Answer:** C

#### NEW QUESTION 12

A solutions architect at an e-commerce company wants to back up application log data to Amazon S3. The solutions architect is unsure how frequently the logs will be accessed or which logs will be accessed the most. The company wants to keep costs as low as possible by using the appropriate S3 storage class. Which S3 storage class should be implemented to meet these requirements?

- A. S3 Glacier
- B. S3 Intelligent-Tiering
- C. S3 Standard-Infrequent Access (S3 Standard-IA)
- D. S3 One Zone-Infrequent Access (S3 One Zone-IA)

**Answer:** D

**Explanation:**

S3 One Zone-IA is for data that is accessed less frequently, but requires rapid access when needed. Unlike other S3 Storage Classes which store data in a minimum of three Availability Zones (AZs), S3 One Zone-IA stores data in a single AZ and costs 20% less than S3 Standard-IA. S3 One Zone-IA is ideal for customers who want a lower-cost option for infrequently accessed data but do not require the availability and resilience of S3 Standard or S3 Standard-IA. It's a good choice for storing secondary backup copies of on-premises data or easily re-creatable data. You can also use it as cost-effective storage for data that is replicated from another AWS Region using S3 Cross-Region Replication.

**NEW QUESTION 17**

A company has a legacy application that processes data in two parts. The second part of the process takes longer than the first, so the company has decided to rewrite the application as two microservices running on Amazon ECS that can scale independently.

How should a solutions architect integrate the microservices?

- A. Implement code in microservice 1 to send data to an Amazon S3 bucket
- B. Use S3 event notifications to invoke microservice 2.
- C. Implement code in microservice 1 to publish data to an Amazon SNS topic. Implement code in microservice 2 to subscribe to this topic
- D. Implement code in microservice 1 to send data to Amazon Kinesis Data Firehose
- E. Implement code in microservice 2 to read from Kinesis Data Firehose.
- F. Implement code in microservice 1 to send data to an Amazon SQS queue. Implement code in microservice 2 to process messages from the queue

**Answer:** C

**NEW QUESTION 21**

A solutions architect is designing the cloud architecture for a new application being deployed on AWS. The process should run in parallel while adding and removing application nodes as needed based on the number of jobs to be processed. The processor application is stateless. The solutions architect must ensure that the application is loosely coupled and the job items are durably stored.

Which design should the solutions architect use?

- A. Create an Amazon SNS topic to send the jobs that need to be processed. Create an Amazon Machine Image (AMI) that consists of the processor application. Create a launch configuration that uses the AMI. Create an Auto Scaling group using the launch configuration. Set the scaling policy for the Auto Scaling group to add and remove nodes based on CPU usage.
- B. Create an Amazon SQS queue to hold the jobs that need to be processed. Create an Amazon Machine Image (AMI) that consists of the processor application. Create a launch configuration that uses the AMI. Create an Auto Scaling group using the launch configuration. Set the scaling policy for the Auto Scaling group to add and remove nodes based on network usage.
- C. Create an Amazon SQS queue to hold the jobs that need to be processed. Create an Amazon Machine Image (AMI) that consists of the processor application. Create a launch template that uses the AMI. Create an Auto Scaling group using the launch template. Set the scaling policy for the Auto Scaling group to add and remove nodes based on the number of items in the SQS queue.
- D. Create an Amazon SNS topic to send the jobs that need to be processed. Create an Amazon Machine Image (AMI) that consists of the processor application. Create a launch template that uses the AMI. Create an Auto Scaling group using the launch template. Set the scaling policy for the Auto Scaling group to add and remove nodes based on the number of messages published to the SNS topic.

**Answer:** C

**NEW QUESTION 25**

A company's application is running on Amazon EC2 instances in a single Region. In the event of a disaster, a solutions architect needs to ensure that the resources can also be deployed to a second Region.

Which combination of actions should the solutions architect take to accomplish this? (Select TWO)

- A. Detach a volume on an EC2 instance and copy it to Amazon S3
- B. Launch a new EC2 instance from an Amazon Machine Image (AMI) in a new Region
- C. Launch a new EC2 instance in a new Region and copy a volume from Amazon S3 to the new instance
- D. Copy an Amazon Machine Image (AMI) of an EC2 instance and specify a different Region for the destination
- E. Copy an Amazon Elastic Block Store (Amazon EBS) volume from Amazon S3 and launch an EC2 instance in the destination Region using that EBS volume

**Answer:** BD

**NEW QUESTION 29**

A financial services company has a web application that serves users in the United States and Europe. The application consists of a database tier and a web server tier. The database tier consists of a MySQL database hosted in us-east-1. Amazon Route 53 geoproximity routing is used to direct traffic to instances in the closest Region. A performance review of the system reveals that European users are not receiving the same level of query performance as those in the United States.

Which changes should be made to the database tier to improve performance?

- A. Migrate the database to Amazon RDS for MySQL. Configure Multi-AZ in one of the European Regions.
- B. Migrate the database to Amazon DynamoDB. Use DynamoDB global tables to enable replication to additional Regions.
- C. Deploy MySQL instances in each Region. Deploy an Application Load Balancer in front of MySQL to reduce the load on the primary instance.
- D. Migrate the database to an Amazon Aurora global database in MySQL compatibility mode. Configure read replicas in one of the European Regions.

**Answer:** D

**NEW QUESTION 34**

A web application is deployed in the AWS Cloud. It consists of a two-tier architecture that includes a web layer and a database layer. The web server is vulnerable to cross-site scripting (XSS) attacks.

What should a solutions architect do to remediate the vulnerability?

- A. Create a Classic Load Balancer. Put the web layer behind the load balancer and enable AWS WAF.
- B. Create a Network Load Balancer. Put the web layer behind the load balancer and enable AWS WAF.
- C. Create an Application Load Balancer. Put the web layer behind the load balancer and enable AWS WAF.

D. Create an Application Load Balancer Put the web layer behind the load balancer and use AWS Shield Standard

**Answer: C**

#### NEW QUESTION 37

A company has a two-tier application architecture that runs in public and private subnets Amazon EC2 instances running the web application are in the public subnet and a database runs on the private subnet The web application instances and the database are running in a single Availability Zone (AZ). Which combination of steps should a solutions architect take to provide high availability for this architecture? (Select TWO.)

- A. Create new public and private subnets in the same AZ for high availability
- B. Create an Amazon EC2 Auto Scaling group and Application Load Balancer spanning multiple AZs
- C. Add the existing web application instances to an Auto Scaling group behind an Application Load Balancer
- D. Create new public and private subnets in a new AZ Create a database using Amazon EC2 in one AZ
- E. Create new public and private subnets in the same VPC each in a new AZ Migrate the database to an Amazon RDS multi-AZ deployment

**Answer: BE**

#### NEW QUESTION 41

A company hosts an application on multiple Amazon EC2 instances The application processes messages from an Amazon SQS queue writes to an Amazon RDS table and deletes the message from the queue Occasional duplicate records are found in the RDS table The SQS queue does not contain any duplicate messages What should a solutions architect do to ensure messages are being processed once only?

- A. Use the CreateQueue API call to create a new queue
- B. Use the AddPermission API call to add appropriate permissions
- C. Use the ReceiveMessage API call to set an appropriate wait time.
- D. Use the ChangeMessageVisibility API call to increase the visibility timeout

**Answer: D**

#### NEW QUESTION 43

A company is performing an AWS Well-Architected Framework review of an existing workload deployed on AWS. The review identified a public-facing website running on the same Amazon EC2 instance as a Microsoft Active Directory domain controller that was installed recently to support other AWS services. A solutions architect needs to recommend a new design that would improve the security of the architecture and minimize the administrative demand on IT staff. What should the solutions architect recommend?

- A. Use AWS Directory Service to create a managed Active Directory
- B. Uninstall Active Directory on the current EC2 instance.
- C. Create another EC2 instance in the same subnet and reinstall Active Directory on it
- D. Uninstall Active Directory.
- E. Use AWS Directory Service to create an Active Directory connection
- F. Proxy Active Directory requests to the Active domain controller running on the current EC2 instance.
- G. Enable AWS Single Sign-On (AWS SSO) with Security Assertion Markup Language (SAML) 2.0 federation with the current Active Directory controller
- H. Modify the EC2 instance's security group to deny public access to Active Directory.

**Answer: C**

#### NEW QUESTION 45

A solutions architect is designing an application for a two-step order process The first step is synchronous and must return to the user with little latency The second step takes longer, so it will be implemented in a separate component Orders must be processed exactly once and in the order in which they are received How should the solutions architect integrate these components?

- A. Use Amazon SQS FIFO queues.
- B. Use an AWS Lambda function along with Amazon SQS standard queues
- C. Create an SNS topic and subscribe an Amazon SQS FIFO queue to that topic
- D. Create an SNS topic and subscribe an Amazon SQS Standard queue to that topic.

**Answer: C**

#### NEW QUESTION 47

A solutions architect needs to design a managed storage solution for a company's application that includes high-performance machine learning This application runs on AWS Fargate and the connected storage needs to have concurrent access to files and deliver high performance. Which storage option should the solutions architect recommend?

- A. Create an Amazon S3 bucket for the application and establish an IAM role for Fargate to communicate with Amazon S3
- B. Create an Amazon FSx for Lustre file share and establish an IAM role that allows Fargate to communicate with FSx for Lustre.
- C. Create an Amazon Elastic File System (Amazon EFS) file share and establish an IAM role that allows Fargate to communicate with Amazon EFS.
- D. Create an Amazon Elastic Block Store (Amazon EBS) volume for the application and establish an IAM role that allows Fargate to communicate with Amazon EBS

**Answer: B**

#### NEW QUESTION 48

A company runs a multi-tier web application that hosts news content The application runs on Amazon EC2 instances behind an Application Load Balancer. The instances run in an EC2 Auto Scaling group across multiple Availability Zones and use an Amazon Aurora database. A solutions architect needs to make the application more resilient to periodic increases in request rates Which architecture should the solutions architect implement? (Select TWO )

- A. Add AWS Shield.
- B. Add Aurora Replicas
- C. Add AWS Direct Connect
- D. Add AWS Global Accelerator.
- E. Add an Amazon CloudFront distribution in front of the Application Load Balancer

**Answer:** DE

#### NEW QUESTION 50

A company built a food ordering application that captures user data and stores it for future analysis. The application's static front end is deployed on an Amazon EC2 instance. The front-end application sends the requests to the backend application running on separate EC2 instance. The backend application then stores the data in Amazon RDS.

What should a solutions architect do to decouple the architecture and make it scalable?"

- A. Use Amazon S3 to serve the front-end application which sends requests to Amazon EC2 to execute the backend application. The backend application will process and store the data in Amazon RDS.
- B. Use Amazon S3 to serve the front-end application and write requests to an Amazon Simple Notification Service (Amazon SNS) topic. Subscribe Amazon EC2 instances to the HTTP/HTTPS endpoint of the topic and process and store the data in Amazon RDS.
- C. Use an EC2 instance to serve the front end and write requests to an Amazon SQS queue. Place the backend instance in an Auto Scaling group and scale based on the queue depth to process and store the data in Amazon RDS.
- D. Use Amazon S3 to serve the static front-end application and send requests to Amazon API Gateway which writes the requests to an Amazon SQS queue. Place the backend instances in an Auto Scaling group and scale based on the queue depth to process and store the data in Amazon RDS.

**Answer:** D

#### NEW QUESTION 55

A solutions architect needs to ensure that API calls to Amazon DynamoDB from Amazon EC2 instances in a VPC do not traverse the internet. What should the solutions architect do to accomplish this? (Select TWO.)

- A. Create a route table entry for the endpoint.
- B. Create a gateway endpoint for DynamoDB.
- C. Create a new DynamoDB table that uses the endpoint.
- D. Create an ENI for the endpoint in each of the subnets of the VPC.
- E. Create a security group entry in the default security group to provide access.

**Answer:** AB

#### NEW QUESTION 57

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