AWS Certified Solutions Architect - Associate

1. A company is planning to migrate a TCP-based application into the company's VPC The application is publicly accessible on a nonstandard TCP port through a hardware appliance in the company's data centre. This public endpoint can process up to 3 million requests per second with low latency. The company requires the same level of performance for the new public endpoint in AWS.
What should a solutions architect recommend to meet this requirement?

A. Deploy a Network Load Balancer (NLB). Configure the NLB to be publicly accessible over the TCP port that the application requires.

B. Deploy an Application Load Balancer (ALB). Configure the ALB to be publicly accessible over the TCP port that the application requires.

C. Deploy an Amazon CloudFront distribution that listens on the TCP port that the application requires Use an Application Load Balancer as the origin.

D. Deploy an Amazon API Gateway API that is configured with the TCP port that the application requires. Configure AWS Lambda functions with provisioned concurrency to process the requests.

Answer(s): A

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2. A company has an ecommerce application that stores data in an on-premises SQL database. The company has decided to migrate this database to AWS. However, as part of the migration, the company wants to find a way to attain sub-millisecond responses to common read requests. A solutions architect knows that the increase in speed is paramount and that a small percentage of stale data returned in the database reads is acceptable.
What should the solutions architect recommend'?

A. Build Amazon RDS read replicas.

B. Build the database as a larger instance type.

C. Build a database cache using Amazon ElastiCache.

D. Build a database cache using Amazon Elasticsearch Service (Amazon ES).

Answer(s): C

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3. A company is implementing new data retention policies for all databases that run on Amazon RDS DB instances. The company must retain daily backups for a minimum period of 2 years. The backups must be consistent and restorable.
Which solution should a solutions architect recommend to meet these requirements?

A. Create a backup vault in AWS Backup to retain RDS backups. Create a new backup plan with a daily schedule and an expiration period of 2 years after creation. Assign the RDS DB instances to the backup plan.Configure a backup window for the RDS DB Instances for daily snapshots. Assign a snapshot retention policy of 2 years to each RDS DB instance. Use Amazon Data Lifecycle Manager (Amazon DLM) to schedule snapshot deletions.

B. Configure database transaction logs to be automatically backed up to Amazon CloudWatch Logs with an expiration period of 2 years.

C. Configure an AWS Database Migration Service (AWS DMS) replication task. Deploy a replication instance, and configure a change data capture (CDC) task to stream database changes to Amazon S3 as the target Configure S3 Lifecycle policies to delete the snapshots after 2 years.

Answer(s): A

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4. A disaster response team is using drones to collect images of recent storm damage. The response team's laptops lack the storage and compute capacity to transfer the images and process the data While the team has Amazon EC2 instances for processing and Amazon S3 buckets for storage, network connectivity is intermittent and unreliable. The images need to be processed to evaluate the damage.
What should a solutions architect recommend'?

A. Use AWS Snowball Edge devices to process and store the images.

B. Upload the images to Amazon Simple Queue Service (Amazon SQS) during intermittent connectivity to EC2 instances.

C. Configure Amazon Kinesis Data Firehose to create multiple delivery streams aimed separately at the S3 buckets for storage and the EC2 instances for processing the images.

D. Use AWS Storage Gateway pre-installed on a hardware appliance to cache the images locally for Amazon S3 to process the images when connectivity becomes available.

Answer(s): A

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5. A solutions architect needs to design a network that will allow multiple Amazon EC2 instances to access a common data source used for mission-critical data that can be accessed by all the EC2 instances simultaneously. The solution must be highly scalable, easy to implement, and support the NFS protocol.
Which solution meets these requirements?

A. Create an Amazon EFS file system Configure a mount target in each Availability Zone. Attach each instance to the appropriate mount target.

B. Create an additional EC2 instance and configure it as a file server Create a security group that allows communication between the instances and apply that to the additional instance.

C. Create an Amazon S3 bucket with the appropriate permissions Create a role in AWS IAM that grants the correct permissions to the S3 bucket. Attach the role to the EC2 instances that need access to the data.

D. Create an Amazon EBS volume with the appropriate permissions. Create a role in AWS IAM that grants the correct permissions to the EBS volume. Attach the role to the EC2 instances that need access to the data.

Answer(s): A

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6. A manufacturing company has machine sensors that upload csv files to an Amazon S3 bucket These csv files must be converted into images and must be made available as soon as possible for the automatic generation of graphical reports.
The images become irrelevant after 1 month, but the csv files must be kept to train machine learning (ML) models twice a year. The ML trainings and audits are planned weeks in advance.
Which combination of steps will meet these requirements MOST cost-effectively? (Select TWO)

- [ ] A. Launch an Amazon EC2 Spot Instance that downloads the .csv files every hour, generates the image files, and uploads the images to the S3 bucket.
- [ ] B. Design an AWS Lambda function that converts the .csv files into images and stores the images in the S3 bucket Invoke the Lambda function when a csv file is uploaded.
- [ ] C. Create S3 Lifecycle rules for .csv files and image files in the S3 bucket Transition the csv files from S3 Standard to S3 Glacier 1 day after they are uploaded. Expire the image files after 30 days.
- [ ] D. Create S3 Lifecycle rules for csv files and image files in the S3 bucket Transition the csv files from S3 Standard to S3 One Zone-Infrequent Access (S3 One Zone-IA) 1 day after they are uploaded Expire the image files after 30 days.
- [ ] E. Create S3 Lifecycle rules for .csv files and image files in the S3 bucket. Transition the csv files from S3 Standard to S3 Standard-Infrequent Access (S3 Standard-IA) 1 day after they are uploaded. Keep the image files in Reduced Redundancy Storage (RRS).

Answer(s): B D

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7. A company is developing a serverless web application that gives users the ability to interact with real-time analytics from online games. The data from the games must be streamed in real time. The company needs a durable, low-latency database option for user data. The company does not know how many users will use the application Any design considerations must provide response times of single-digit milliseconds as the application scales.
Which combination of AWS services will meet these requirements? (Select TWO.)

- [ ] A. Amazon CloudFront
- [ ] B. Amazon DynamoDB
- [ ] C. Amazon Kinesis
- [ ] D. Amazon RDS
- [ ] E. AWS Global Accelerator

Answer(s): B C

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8. A company has an application that calls AWS Lambda functions. A recent code review found database credentials stored in the source code. The database credentials needs to be removed from the Lambda source code. The credentials must then be securely stored and rotated on a on-going basis to meet security policy requirements.
What should a solutions architect recommend meet these requirements?

A. Store the password in AWS CloudHSM. Associate the Lambda function with a role that can review the password from CloudHSM given key ID.

B. Store the password in AWS Secrets Manager . A associate the Lambda function with a role that can retrieve the password from secrets Manager given its secret ID.

C. Move the database password to an environment variable associate the Lambda function Retrieve the password from the environment variable upon execution.

D. Store the password in AWS Key Management Service (AWS KMS). Associate the Lambda function with a role that can retrieve the password from AWS KMS given its key I

Answer(s): B

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9. An application running on AWS uses an Amazon Aurora Multi-AZ deployment for its database When evaluating performance metrics, a solutions architect discovered that the database reads are causing high I/O and adding latency to the write requests against the database.
What should the solutions architect do to separate the read requests from the write requests?

A. Enable read-through caching on the Amazon Aurora database.

B. Update the application to read from the Multi-AZ standby instance.

C. Create a read replica and modify the application to use the appropriate endpoint.

D. Create a second Amazon Aurora database and link it to the primary database as a read replica.

Answer(s): C

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10. A company's website hosted on Amazon EC2 instances processes classified data stored in Amazon S3. Due to security concerns, the company requires a private and secure connection between its EC2 resources and Amazon S3.
Which solution meets these requirements?

A. Set up S3 bucket policies to allow access from a VPC endpoint.

B. Set up an IAM policy to grant read-write access to the S3 bucket.

C. Set up a NAT gateway to access resources outside the private subnet.

D. Set up an access key ID and a secret access key to access the S3 bucket.

Answer(s): A

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11. A company's near-real-time streaming application is running on AWS. As the data is ingested, a job runs on the data and takes 30 minutes to complete. The workload frequently experiences high latency due to large amounts of incoming data A solutions architect needs to design a scalable and serverless solution to enhance performance.
Which combination of steps should the solutions architect take? (Select TWO.)

- [ ] A. Use Amazon Kinesis Data Firehose to ingest the data.
- [ ] B. Use AWS Lambda with AWS Step Functions to process the data.
- [ ] C. Use AWS Database Migration Service (AWS DMS) to ingest the data.
- [ ] D. Use Amazon EC2 instances in an Auto Scaling group to process the data.
- [ ] E. Use AWS Fargate with Amazon Elastic Container Service (Amazon ECS) to process the data.

Answer(s): A B

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12. A company has created an isolated backup of its environment in another Region The application is running in warm standby mode and is fronted by an Application Load Balancer (ALB) The current failover process is manual and requires updating a DNS alias record to point to the secondary ALB in another Region.
What should a solutions architect do to automate the failover process?

A. Enable an ALB health check

B. Enable an Amazon Route 53 health check.

C. Create a CNAME record on Amazon Route 53 pointing to the ALB endpoint.

D. Create conditional forwarding rules on Amazon Route 53 pointing to an internal BIND DNS server.

Answer(s): B

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13. A company recently signed a contract with an AWS Managed Service Provider (MSP) Partner for help with an application migration initiative. A solutions architect needs to share an Amazon Machine Image (AMI) from an existing AWS account with the MSP Partner's AWS account. The AMI is backed by Amazon Elastic Block Store (Amazon EBS) and uses a customer managed customer master key (CMK) to encrypt EBS volume snapshots.
What is the MOST secure way for the solutions architect to share the AMI with the MSP Partner's AWS account?

A. Make the encrypted AMI and snapshots publicly available. Modify the CMK's key policy to allow the MSP Partner's AWS account to use the key.

B. Modify the launchPermission property of the AMI. Share the AMI with the MSP Partner's AWS account only. Modify the CMK's key policy to allow the MSP Partner's AWS account to use the key.

C. Modify the launchPermission property of the AMI Share the AMI with the MSP Partner's AWS account only. Modify the CMK's key policy to trust a new CMK that is owned by the MSP Partner for encryption.

D. Export the AMI from the source account to an Amazon S3 bucket in the MSP Partner's AWS account. Encrypt the S3 bucket with a CMK that is owned by the MSP Partner Copy and launch the AMI in the MSP Partner's AWS account.

Answer(s): B

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14. A company is designing a new web service that will run on Amazon EC2 instances behind an Elastic Load Balancer. However many of the web service clients can only reach IP addresses whitelisted on their firewalls.
What should a solutions architect recommend to meet the clients' needs?

A. A Network Load Balancer with an associated Elastic IP address.

B. An Application Load Balancer with an associated Elastic IP address.

C. An A record in an Amazon Route 53 hosted zone pointing to an Elastic IP address.

D. An EC2 instance with a public IP address running as a proxy in front of the load balancer.

Answer(s): A

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15. A solutions architect must design a database solution for a high-traffic ecommerce web application. The database stores customer profiles and shopping cart information. The database must support a peak load of several million requests each second and deliver responses in milliseconds The operational overhead for managing and scaling the database must be minimized.
Which database solution should the solutions architect recommend?

A. Amazon Aurora

B. Amazon DynamoDB

C. Amazon RDS

D. Amazon Redshift

Answer(s): B

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16. A solutions architect is designing the cloud architecture for a new application that is being deployed on AWS. The application's users will interactively download and upload files. Files that are more than 90 days old will be accessed less frequently than newer files, but all files need to be instantly available. The solutions architect must ensure that the application can scale to store petabytes of data with maximum durability.
Which solution meets these requirements?

A. Store the files in Amazon S3 Standard. Create an S3 Lifecycle policy that moves objects that are more than 90 days old to S3 Glacier.

B. Store the tiles in Amazon S3 Standard. Create an S3 Lifecycle policy that moves objects that are more than 90 days old to S3 Standard-Infrequent Access (S3 Standard-IA).

C. Store the files in Amazon Elastic Block Store (Amazon EBS) volumes. Schedule snapshots of the volumes. Use the snapshots to archive data that is more than 90 days old.

D. Store the files in RAID-striped Amazon Elastic Block Store (Amazon EBS) volumes. Schedule snapshots of the volumes. Use the snapshots to archive data that is more than 90 days old.

Answer(s): B

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17. A company has a service that produces event data. The company wants to use AWS to process the event data as it is received. The data is written in a specific order that must be maintained throughout processing The company wants to implement a solution that minimizes operational overhead.
How should a solutions architect accomplish this?

A. Create an Amazon Simple Queue Service (Amazon SQS) FIFO queue to hold messages Set up an AWS Lambda function to process messages from the queue.

B. Create an Amazon Simple Notification Service (Amazon SNS) topic to deliver notifications containing payloads to process Configure an AWS Lambda function as a subscriber.

C. Create an Amazon Simple Queue Service (Amazon SQS) standard queue to hold messages. Set up an AWS Lambda function to process messages from the queue independently.

D. Create an Amazon Simple Notification Service (Amazon SNS) topic to deliver notifications containing payloads to process. Configure an Amazon Simple Queue Service (Amazon SQS) queue as a subscriber.

Answer(s): A

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18. A social media company is building a feature tor its website. The feature will give users the ability to upload photos. The company expects significant increases in demand during large events and must ensure that the website can handle the upload traffic from users.
Which solution meets these requirements with the MOST scalability?

A. Upload files from the user's browser to the application servers Transfer the files to an Amazon S3 bucket.

B. Provision an AWS Storage Gateway file gateway. Upload files directly from the user's browser to the file gateway.

C. Generate Amazon S3 presigned URLs in the application. Upload files directly from the user's browser into an S3 bucket.

D. Provision an Amazon Elastic File System (Amazon EFS) file system. Upload files directly from the user's browser to the file system.

Answer(s): C

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19. A company is concerned about the security of its public web application due to recent web attacks. The application uses an Application Load Balancer (ALB). A solutions architect must reduce the risk of DDoS attacks against the application.
What should the solutions architect do to meet this requirement?

A. Add an Amazon Inspector agent to the ALB

B. Configure Amazon Made to prevent attacks.

C. Enable AWS Shield Advanced to prevent attacks.

D. Configure Amazon GuardDuty to monitor the ALB

Answer(s): C

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20. A website runs a web application that receives a burst of traffic each day at noon. The users upload new pictures and context daily, but have complaining of timeout. The architect uses Amazon EC2 Auto Scaling groups, and the custom application consistently takes 1 minutes to initiate upon boot up before responding to user requests.
How should a solutions architect redesign the architect to better respond to changing traffic?

A. Configure a Network Load Balancer with a slow start configuration.

B. Configure AWS ElastiCache for Redis to offload direct requests to the servers.

C. Configure an Auto Scaling step scaling policy with an instance warmup condition.

D. Configure Amazon CloudFront to use an Application Load Balancer as the origin.

Answer(s): C
