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SAA-C03

Amazon AWS Certified Solutions Architect - Associate Exam

Version 45.3

QUESTIONS & ANSWERS

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Question 1. (Single Select)

A company's software development team needs an Amazon RDS Multi-AZ cluster. The RDS cluster will serve as a backend for a desktop client that is deployed on premises. The desktop client requires direct connectivity to the RDS cluster.

The company must give the development team the ability to connect to the cluster by using the client when the team is in the office.

Which solution provides the required connectivity MOST securely?

A: Create a VPC and two public subnets. Create the RDS cluster in the public subnets. Use AWS Site-to-Site VPN with a customer gateway in the company's office.
B: Create a VPC and two private subnets. Create the RDS cluster in the private subnets. Use AWS Site-to-Site VPN with a customer gateway in the company's office.
C: Create a VPC and two private subnets. Create the RDS cluster in the private subnets. Use RDS security groups to allow the company's office IP ranges to access the cluster.
D: Create a VPC and two public subnets. Create the RDS cluster in the public subnets. Create a cluster user for each developer. Use RDS security groups to allow the users to access the cluster.

Answer: B

Explanation:
Requirement Analysis: Need secure, direct connectivity from an on-premises client to an RDS cluster, accessible only when in the office.
VPC with Private Subnets: Ensures the RDS cluster is not publicly accessible, enhancing security.
Site-to-Site VPN: Provides secure, encrypted connection between on-premises office and AWS VPC.
Implementation:
Create a VPC with two private subnets.
Launch the RDS cluster in the private subnets.
Set up a Site-to-Site VPN connection with a customer gateway in the office.
Conclusion: This setup ensures secure and direct connectivity with minimal exposure, meeting the requirement for secure access from the office.
Reference
AWS Site-to-Site VPN:AWS Site-to-Site VPN Documentation
Amazon RDS:Amazon RDS Documentation

Question 2. (Multi Select)

A company needs to design a hybrid network architecture The company's workloads are currently stored in the AWS Cloud and in on-premises data centers The workloads require single-digit latencies to communicate The company uses an AWS Transit Gateway transit gateway to connect multiple VPCs

Which combination of steps will meet these requirements MOST cost-effectively? (Select TWO.)

A: Establish an AWS Site-to-Site VPN connection to each VPC.
B: Associate an AWS Direct Connect gateway with the transit gateway that is attached to the VPCs.
C: Establish an AWS Site-to-Site VPN connection to an AWS Direct Connect gateway.
D: Establish an AWS Direct Connect connection. Create a transit virtual interface (VIF) to a Direct Connect gateway.
E: Associate AWS Site-to-Site VPN connections with the transit gateway that is attached to the VPCs

Answer: B, D

Explanation:
AWS Direct Connect: Provides a dedicated network connection from your on-premises data center to AWS, ensuring low latency and consistent network performance.
Direct Connect Gateway Association:
Direct Connect Gateway: Acts as a global network transit hub to connect VPCs across different AWS regions.
Association with Transit Gateway: Enables communication between on-premises data centers and multiple VPCs connected to the transit gateway.
Transit Virtual Interface (VIF):
Create Transit VIF: To connect Direct Connect with a transit gateway.
Setup Steps:
Establish a Direct Connect connection.
Create a transit VIF to the Direct Connect gateway.
Associate the Direct Connect gateway with the transit gateway attached to the VPCs.
Cost Efficiency: This combination avoids the recurring costs and potential performance variability of VPN connections, providing a robust, low-latency hybrid network solution.
AWS Direct Connect
Transit Gateway and Direct Connect Gateway

Question 3. (Single Select)

A company is running a highly sensitive application on Amazon EC2 backed by an Amazon RDS database Compliance regulations mandate that all personally identifiable information (Pll) be encrypted at rest.

Which solution should a solutions architect recommend to meet this requirement with the LEAST amount of changes to the infrastructure?

A: Deploy AWS Certificate Manager to generate certificates Use the certificates to encrypt the database volume
B: Deploy AWS CloudHSM. generate encryption keys, and use the keys to encrypt database volumes.
C: Configure SSL encryption using AWS Key Management Service {AWS KMS) keys to encrypt database volumes.
D: Configure Amazon Elastic Block Store (Amazon EBS) encryption and Amazon RDS encryption with AWS Key Management Service (AWS KMS) keys to encrypt instance and database volumes.

Answer: D

Explanation:
EBS Encryption:
Default EBS Encryption: Can be enabled for new EBS volumes.
Use of AWS KMS: Specify AWS KMS keys to handle encryption and decryption of data transparently.
Amazon RDS Encryption:
RDS Encryption: Encrypts the underlying storage for RDS instances using AWS KMS.
Configuration: Enable encryption when creating the RDS instance or modify an existing instance to enable encryption.
Least Amount of Changes:
Both EBS and RDS support seamless encryption with AWS KMS, requiring minimal changes to the existing infrastructure.
Enables compliance with regulatory requirements without modifying the application.
Operational Efficiency: Using AWS KMS for both EBS and RDS ensures a consistent, managed approach to encryption, simplifying key management and enhancing security.
Amazon EBS Encryption
Amazon RDS Encryption
AWS Key Management Service

Question 4. (Single Select)

A global ecommerce company runs its critical workloads on AWS. The workloads use an Amazon RDS for PostgreSQL DB instance that is configured for a Multi-AZ deployment.

Customers have reported application timeouts when the company undergoes database failovers. The company needs a resilient solution to reduce failover time

Which solution will meet these requirements?

A: Create an Amazon RDS Proxy. Assign the proxy to the DB instance.
B: Create a read replica for the DB instance Move the read traffic to the read replica.
C: Enable Performance Insights. Monitor the CPU load to identify the timeouts.
D: Take regular automatic snapshots Copy the automatic snapshots to multiple AWS Regions

Answer: A

Explanation:
Amazon RDS Proxy: RDS Proxy is a fully managed, highly available database proxy that makes applications more resilient to database failures by pooling and sharing connections, and it can automatically handle database failovers.
Reduced Failover Time: By using RDS Proxy, the connection management between the application and the database is improved, reducing failover times significantly. RDS Proxy maintains connections in a connection pool and reduces the time required to re-establish connections during a failover.
Configuration:
Create an RDS Proxy instance.
Configure the proxy to connect to the RDS for PostgreSQL DB instance.
Modify the application configuration to use the RDS Proxy endpoint instead of the direct database endpoint.
Operational Benefits: This solution provides high availability and reduces application timeouts during failovers with minimal changes to the application code.
Amazon RDS Proxy
Setting Up RDS Proxy

Question 5. (Single Select)

A company is planning to deploy its application on an Amazon Aurora PostgreSQL Serverless v2 cluster. The application will receive large amounts of traffic. The company wants to optimize the storage performance of the cluster as the load on the application increases

Which solution will meet these requirements MOST cost-effectively?

A: Configure the cluster to use the Aurora Standard storage configuration.
B: Configure the cluster storage type as Provisioned IOPS.
C: Configure the cluster storage type as General Purpose.
D: Configure the cluster to use the Aurora I/O-Optimized storage configuration.

Answer: D

Explanation:
Aurora I/O-Optimized: This storage configuration is designed to provide consistent high performance for Aurora databases. It automatically scales IOPS as the workload increases, without needing to provision IOPS separately.
Cost-Effectiveness: With Aurora I/O-Optimized, you only pay for the storage and I/O you use, making it a cost-effective solution for applications with varying and unpredictable I/O demands.
Implementation:
During the creation of the Aurora PostgreSQL Serverless v2 cluster, select the I/O-Optimized storage configuration.
The storage system will automatically handle scaling and performance optimization based on the application load.
Operational Efficiency: This configuration reduces the need for manual tuning and ensures optimal performance without additional administrative overhead.
Amazon Aurora I/O-Optimized

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