

Exam Questions SAP-C02

AWS Certified Solutions Architect - Professional

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NEW QUESTION 1

- (Exam Topic 1)

A company wants to migrate its data analytics environment from on premises to AWS. The environment consists of two simple Node.js applications. One of the applications collects sensor data and loads it into a MySQL database. The other application aggregates the data into reports. When the aggregation jobs run, some of the load jobs fail to run correctly.

The company must resolve the data loading issue. The company also needs the migration to occur without interruptions or changes for the company's customers. What should a solutions architect do to meet these requirements?

- A. Set up an Amazon Aurora MySQL database as a replication target for the on-premises database. Create an Aurora Replica for the Aurora MySQL database, and move the aggregation jobs to run against the Aurora Replica. Set up collection endpoints as AWS Lambda functions behind a Network Load Balancer (NLB), and use Amazon RDS Proxy to write to the Aurora MySQL database. When the databases are synced, disable the replication job and restart the Aurora Replica as the primary instance.
- B. Point the collector DNS record to the NLB.
- C. Set up an Amazon Aurora MySQL database. Use AWS Database Migration Service (AWS DMS) to perform continuous data replication from the on-premises database to Aurora. Move the aggregation jobs to run against the Aurora MySQL database. Set up collection endpoints behind an Application Load Balancer (ALB) as Amazon EC2 instances in an Auto Scaling group. When the databases are synced, point the collector DNS record to the ALB. Disable the AWS DMS sync task after the cutover from on premises to AWS.
- D. Set up an Amazon Aurora MySQL database. Use AWS Database Migration Service (AWS DMS) to perform continuous data replication from the on-premises database to Aurora. Create an Aurora Replica for the Aurora MySQL database and move the aggregation jobs to run against the Aurora Replica. Set up collection endpoints as AWS Lambda functions behind an Application Load Balancer (ALB) and use Amazon RDS Proxy to write to the Aurora MySQL database. When the databases are synced, point the collector DNS record to the ALB. Disable the AWS DMS sync task after the cutover from on premises to AWS.
- E. Set up an Amazon Aurora MySQL database. Create an Aurora Replica for the Aurora MySQL database and move the aggregation jobs to run against the Aurora Replica. Set up collection endpoints as an Amazon Kinesis data stream. Use Amazon Kinesis Data Firehose to replicate the data to the Aurora MySQL database. When the databases are synced, disable the replication job and restart the Aurora Replica as the primary instance. Point the collector DNS record to the Kinesis data stream.

Answer: C

Explanation:

Set up an Amazon Aurora MySQL database. Use AWS Database Migration Service (AWS DMS) to perform continuous data replication from the on-premises database to Aurora. Create an Aurora Replica for the Aurora MySQL database, and move the aggregation jobs to run against the Aurora Replica. Set up collection endpoints as AWS Lambda functions behind an Application Load Balancer (ALB), and use Amazon RDS Proxy to write to the Aurora MySQL database. When the databases are synced, point the collector DNS record to the ALB. Disable the AWS DMS sync task after the cutover from on premises to AWS.

Amazon RDS Proxy allows applications to pool and share connections established with the database, improving database efficiency and application scalability. With RDS Proxy, failover times for Aurora and RDS databases are reduced by up to 66%.

NEW QUESTION 2

- (Exam Topic 1)

An application is using an Amazon RDS for MySQL Multi-AZ DB instance in the us-east-1 Region. After a failover test, the application lost the connections to the database and could not re-establish the connections. After a restart of the application, the application re-established the connections.

A solutions architect must implement a solution so that the application can re-establish connections to the database without requiring a restart.

Which solution will meet these requirements?

- A. Create an Amazon Aurora MySQL Serverless v1 DB instance.
- B. Migrate the RDS DB instance to the Aurora Serverless v1 DB instance.
- C. Update the connection settings in the application to point to the Aurora reader endpoint.
- D. Create an RDS proxy.
- E. Configure the existing RDS endpoint as a target.
- F. Update the connection settings in the application to point to the RDS proxy endpoint.
- G. Create a two-node Amazon Aurora MySQL DB cluster.
- H. Migrate the RDS DB instance to the Aurora DB cluster.
- I. Create an RDS proxy.
- J. Configure the existing RDS endpoint as a target.
- K. Update the connection settings in the application to point to the RDS proxy endpoint.
- L. Create an Amazon S3 bucket.
- M. Export the database to Amazon S3 by using AWS Database Migration Service (AWS DMS). Configure Amazon Athena to use the S3 bucket as a data store.
- N. Install the latest Open Database Connectivity (ODBC) driver for the application.
- O. Update the connection settings in the application to point to the Athena endpoint.

Answer: B

Explanation:

Amazon RDS Proxy is a fully managed database proxy service for Amazon Relational Database Service (RDS) that makes applications more scalable, resilient, and secure. It allows applications to pool and share connections to an RDS database, which can help reduce database connection overhead, improve scalability, and provide automatic failover and high availability.

NEW QUESTION 3

- (Exam Topic 1)

A large mobile gaming company has successfully migrated all of its on-premises infrastructure to the AWS Cloud. A solutions architect is reviewing the environment to ensure that it was built according to the design and that it is running in alignment with the Well-Architected Framework.

While reviewing previous monthly costs in Cost Explorer, the solutions architect notices that the creation and subsequent termination of several large instance types account for a high proportion of the costs. The solutions architect finds out that the company's developers are launching new Amazon EC2 instances as part of their testing and that the developers are not using the appropriate instance types.

The solutions architect must implement a control mechanism to limit the instance types that only the developers can launch.

Which solution will meet these requirements?

- A. Create a desired-instance-type managed rule in AWS Config.
- B. Configure the rule with the instance types that are allowed.
- C. Attach the rule to an event to run each time a new EC2 instance is launched.

- D. In the EC2 console, create a launch template that specifies the instance types that are allowe
- E. Assign the launch template to the developers' IAM accounts.
- F. Create a new IAM polic
- G. Specify the instance types that are allowe
- H. Attach the policy to an IAM group that contains the IAM accounts for the developers
- I. Use EC2 Image Builder to create an image pipeline for the developers and assist them in the creation of a golden image.

Answer: C

Explanation:

This is doable with IAM policy creation to restrict users to specific instance types. Found the below article. <https://blog.vizuri.com/limiting-allowed-aws-instance-type-with-iam-policy>

NEW QUESTION 4

- (Exam Topic 1)

A company is refactoring its on-premises order-processing platform in the AWS Cloud. The platform includes a web front end that is hosted on a fleet of VMs RabbitMQ to connect the front end to the backend, and a Kubernetes cluster to run a containerized backend system to process the orders. The company does not want to make any major changes to the application

Which solution will meet these requirements with the LEAST operational overhead?

- A. Create an AMI of the web server VM Create an Amazon EC2 Auto Scaling group that uses the AMI and an Application Load Balancer Set up Amazon MQ to replace the on-premises messaging queue Configure Amazon Elastic Kubernetes Service (Amazon EKS) to host the order-processing backend
- B. Create a custom AWS Lambda runtime to mimic the web server environment Create an Amazon API Gateway API to replace the front-end web servers Set up Amazon MQ to replace the on-premises messaging queue Configure Amazon Elastic Kubernetes Service (Amazon EKS) to host the order-processing backend
- C. Create an AMI of the web server VM Create an Amazon EC2 Auto Scaling group that uses the AMI and an Application Load Balancer Set up Amazon MQ to replace the on-premises messaging queue Install Kubernetes on a fleet of different EC2 instances to host the order-processing backend
- D. Create an AMI of the web server VM Create an Amazon EC2 Auto Scaling group that uses the AMI and an Application Load Balancer Set up an Amazon Simple Queue Service (Amazon SQS) queue to replace the on-premises messaging queue Configure Amazon Elastic Kubernetes Service (Amazon EKS) to host the order-processing backend

Answer: A

Explanation:

<https://aws.amazon.com/about-aws/whats-new/2020/11/announcing-amazon-mq-rabbitmq/>

NEW QUESTION 5

- (Exam Topic 1)

A company uses AWS Organizations for a multi-account setup in the AWS Cloud. The company uses AWS Control Tower for governance and uses AWS Transit Gateway for VPC connectivity across accounts.

In an AWS application account, the company's application team has deployed a web application that uses AWS Lambda and Amazon RDS. The company's database administrators have a separate DBA account and use the account to centrally manage all the databases across the organization. The database administrators use an Amazon EC2 instance that is deployed in the DBA account to access an RDS database that is deployed in the application account. The application team has stored the database credentials as secrets in AWS Secrets Manager in the application account. The application team is manually sharing the secrets with the database administrators. The secrets are encrypted by the default AWS managed key for Secrets Manager in the application account. A solutions architect needs to implement a solution that gives the database administrators access to the database and eliminates the need to manually share the secrets.

Which solution will meet these requirements?

- A. Use AWS Resource Access Manager (AWS RAM) to share the secrets from the application account with the DBA account
- B. In the DBA account, create an IAM role that is named DBA-Admi
- C. Grant the role the required permissions to access the shared secret
- D. Attach the DBA-Admin role to the EC2 instance for access to the cross-account secrets.
- E. In the application account, create an IAM role that is named DBA-Secre
- F. Grant the role the required permissions to access the secret
- G. In the DBA account, create an IAM role that is named DBA-Admi
- H. Grant the DBA-Admin role the required permissions to assume the DBA-Secret role in the application account
- I. Attach the DBA-Admin role to the EC2 instance for access to the cross-account secrets.
- J. In the DBA account, create an IAM role that is named DBA-Admi
- K. Grant the role the required permissions to access the secrets and the default AWS managed key in the application account
- L. In the application account, attach resource-based policies to the key to allow access from the DBA account
- M. Attach the DBA-Admin role to the EC2 instance for access to the cross-account secrets.
- N. In the DBA account, create an IAM role that is named DBA-Admi
- O. Grant the role the required permissions to access the secrets in the application account
- P. Attach an SCP to the application account to allow access to the secrets from the DBA account
- Q. Attach the DBA-Admin role to the EC2 instance for access to the cross-account secrets.

Answer: B

Explanation:

➤ Option B is correct because creating an IAM role in the application account that has permissions to access the secrets and creating an IAM role in the DBA account that has permissions to assume the role in the application account eliminates the need to manually share the secrets. This approach uses cross-account IAM roles to grant access to the secrets in the application account. The database administrators can assume the role in the application account from their EC2 instance in the DBA

account and retrieve the secrets without having to store them locally or share them manually2

References: 1: <https://docs.aws.amazon.com/ram/latest/userguide/what-is.html> 2:

https://docs.aws.amazon.com/IAM/latest/UserGuide/tutorial_cross-account-with-roles.html 3:

<https://docs.aws.amazon.com/kms/latest/developerguide/concepts.html> : https://docs.aws.amazon.com/secretsmanager/latest/userguide/tutorials_basic.html :

<https://docs.aws.amazon.com/IAM/latest/UserGuide/introduction.html>

NEW QUESTION 6

- (Exam Topic 1)

A company has 10 accounts that are part of an organization in AWS Organizations. AWS Config is configured in each account. All accounts belong to either the Prod OU or the NonProd OU.

The company has set up an Amazon EventBridge rule in each AWS account to notify an Amazon Simple Notification Service (Amazon SNS) topic when an Amazon EC2 security group inbound rule is created with 0.0.0.0/0 as the source. The company's security team is subscribed to the SNS topic.

For all accounts in the NonProd OU, the security team needs to remove the ability to create a security group inbound rule that includes 0.0.0.0/0 as the source. Which solution will meet this requirement with the LEAST operational overhead?

- A. Modify the EventBridge rule to invoke an AWS Lambda function to remove the security group inbound rule and to publish to the SNS topic. Deploy the updated rule to the NonProd OU.
- B. Add the vpc-sg-open-only-to-authorized-ports AWS Config managed rule to the NonProd OU.
- C. Configure an SCP to allow the ec2:AuthorizeSecurityGroupIngress action when the value of the aws:SourceIp condition key is not 0.0.0.0/0. Apply the SCP to the NonProd OU.
- D. Configure an SCP to deny the ec2:AuthorizeSecurityGroupIngress action when the value of the aws:SourceIp condition key is 0.0.0.0/0. Apply the SCP to the NonProd OU.

Answer: D

Explanation:

This solution will meet the requirement with the least operational overhead because it directly denies the creation of the security group inbound rule with 0.0.0.0/0 as the source, which is the exact requirement. Additionally, it does not require any additional steps or resources such as invoking a Lambda function or adding a Config rule.

An SCP (Service Control Policy) is a policy that you can use to set fine-grained permissions for your AWS accounts within your organization. You can use SCPs to set permissions for the root user of an account and to delegate permissions to IAM users and roles in the accounts. You can use SCPs to set permissions that allow or deny access to specific services, actions, and resources.

To implement this solution, you would need to create an SCP that denies the ec2:AuthorizeSecurityGroupIngress action when the value of the aws:SourceIp condition key is 0.0.0.0/0. This SCP would then be applied to the NonProd OU. This would ensure that any security group inbound rule that includes 0.0.0.0/0 as the source will be denied, thus meeting the requirement.

Reference: https://docs.aws.amazon.com/organizations/latest/userguide/orgs_manage_policies_scp.html
https://docs.aws.amazon.com/IAM/latest/UserGuide/access_policies_condition-keys.html

NEW QUESTION 7

- (Exam Topic 1)

A software company hosts an application on AWS with resources in multiple AWS accounts and Regions. The application runs on a group of Amazon EC2 instances in an application VPC located in the us-east-1 Region with an IPv4 CIDR block of 10.10.0.0/16. In a different AWS account, a shared services VPC is located in the us-east-2 Region with an IPv4 CIDR block of 10.10.10.0/24. When a cloud engineer uses AWS CloudFormation to attempt to peer the application VPC with the shared services VPC, an error message indicates a peering failure. Which factors could cause this error? (Choose two.)

- A. The IPv4 CIDR ranges of the two VPCs overlap.
- B. The VPCs are not in the same Region.
- C. One or both accounts do not have access to an Internet gateway.
- D. One of the VPCs was not shared through AWS Resource Access Manager.
- E. The IAM role in the peer acceptor account does not have the correct permissions.

Answer: AE

Explanation:

<https://aws.amazon.com/about-aws/whats-new/2017/11/announcing-support-for-inter-region-vpc-peering/>

NEW QUESTION 8

- (Exam Topic 1)

A company wants to migrate its workloads from on-premises to AWS. The workloads run on Linux and Windows. The company has a large on-premises infrastructure that consists of physical machines and VMs that host numerous applications.

The company must capture details about the system configuration, system performance, running processes and network connections of its on-premises servers. The company also must divide the on-premises applications into groups for AWS migrations. The company needs recommendations for Amazon EC2 instance types so that the company can run its workloads on AWS in the most cost-effective manner.

Which combination of steps should a solutions architect take to meet these requirements? (Select THREE.)

- A. Assess the existing applications by installing AWS Application Discovery Agent on the physical machines and VMs.
- B. Assess the existing applications by installing AWS Systems Manager Agent on the physical machines and VMs.
- C. Group servers into applications for migration by using AWS Systems Manager Application Manager.
- D. Group servers into applications for migration by using AWS Migration Hub.
- E. Generate recommended instance types and associated costs by using AWS Migration Hub.
- F. Import data about server sizes into AWS Trusted Advisor.
- G. Follow the recommendations for cost optimization.

Answer: ADE

Explanation:

<https://docs.aws.amazon.com/application-discovery/latest/userguide/discovery-agent.html>
<https://docs.aws.amazon.com/migrationhub/latest/ug/ec2-recommendations.html>

NEW QUESTION 9

- (Exam Topic 1)

A company is running an application in the AWS Cloud. The application runs on containers in an Amazon Elastic Container Service (Amazon ECS) cluster. The ECS tasks use the Fargate launch type. The application's data is relational and is stored in Amazon Aurora MySQL. To meet regulatory requirements, the application must be able to recover to a separate AWS Region in the event of an application failure. In case of a failure, no data can be lost. Which solution will meet these requirements with the LEAST amount of operational overhead?

- A. Provision an Aurora Replica in a different Region.
- B. Set up AWS DataSync for continuous replication of the data to a different Region.
- C. Set up AWS Database Migration Service (AWS DMS) to perform a continuous replication of the data to a different Region.
- D. Use Amazon Data Lifecycle Manager (Amazon DLM) to schedule a snapshot every 5 minutes.

Answer: A

Explanation:

Provision an Aurora Replica in a different Region will meet the requirement of the application being able to recover to a separate AWS Region in the event of an application failure, and no data can be lost, with the least amount of operational overhead.

NEW QUESTION 10

- (Exam Topic 1)

A publishing company's design team updates the icons and other static assets that an ecommerce web application uses. The company serves the icons and assets from an Amazon S3 bucket that is hosted in the company's production account. The company also uses a development account that members of the design team can access.

After the design team tests the static assets in the development account, the design team needs to load the assets into the S3 bucket in the production account. A solutions architect must provide the design team with access to the production account without exposing other parts of the web application to the risk of unwanted changes.

Which combination of steps will meet these requirements? (Select THREE.)

- A. In the production account, create a new IAM policy that allows read and write access to the S3 bucket.
- B. In the development account, create a new IAM policy that allows read and write access to the S3 bucket.
- C. In the production account, create a role
- D. Attach the new policy to the role
- E. Define the development account as a trusted entity.
- F. In the development account, create a role
- G. Attach the new policy to the role
- H. Define the production account as a trusted entity.
- I. In the development account, create a group that contains all the IAM users of the design team
- J. Attach a different IAM policy to the group to allow the sts:AssumeRole action on the role in the production account.
- K. In the development account, create a group that contains all the IAM users of the design team
- L. Attach a different IAM policy to the group to allow the sts:AssumeRole action on the role in the development account.

Answer: ACE

Explanation:

- A. In the production account, create a new IAM policy that allows read and write access to the S3 bucket. The policy grants the necessary permissions to access the assets in the production S3 bucket.
 - C. In the production account, create a role. Attach the new policy to the role. Define the development account as a trusted entity. By creating a role and attaching the policy, and then defining the development account as a trusted entity, the development account can assume the role and access the production S3 bucket with the read and write permissions.
 - E. In the development account, create a group that contains all the IAM users of the design team. Attach a different IAM policy to the group to allow the sts:AssumeRole action on the role in the production account. The IAM policy attached to the group allows the design team members to assume the role created in the production account, thereby giving them access to the production S3 bucket.
- Step 1: Create a role in the Production Account; create the role in the Production account and specify the Development account as a trusted entity. You also limit the role permissions to only read and write access to the productionapp bucket. Anyone granted permission to use the role can read and write to the productionapp bucket. Step 2: Grant access to the role Sign in as an administrator in the Development account and allow the AssumeRole action on the UpdateApp role in the Production account. So, recap, production account you create the policy for S3, and you set development account as a trusted entity. Then on the development account you allow the sts:assumeRole action on the role in production account. https://docs.aws.amazon.com/IAM/latest/UserGuide/tutorial_cross-account-with-roles.html

NEW QUESTION 10

- (Exam Topic 1)

A software company has deployed an application that consumes a REST API by using Amazon API Gateway. AWS Lambda functions, and an Amazon DynamoDB table. The application is showing an increase in the number of errors during PUT requests. Most of the PUT calls come from a small number of clients that are authenticated with specific API keys.

A solutions architect has identified that a large number of the PUT requests originate from one client. The API is noncritical, and clients can tolerate retries of unsuccessful calls. However, the errors are displayed to customers and are causing damage to the API's reputation.

What should the solutions architect recommend to improve the customer experience?

- A. Implement retry logic with exponential backoff and irregular variation in the client application
- B. Ensure that the errors are caught and handled with descriptive error messages.
- C. Implement API throttling through a usage plan at the API Gateway level
- D. Ensure that the client application handles code 429 replies without error.
- E. Turn on API caching to enhance responsiveness for the production stage
- F. Run 10-minute load tests. Verify that the cache capacity is appropriate for the workload.
- G. Implement reserved concurrency at the Lambda function level to provide the resources that are needed during sudden increases in traffic.

Answer: B

Explanation:

<https://aws.amazon.com/premiumsupport/knowledge-center/aws-batch-requests-error/> <https://aws.amazon.com/premiumsupport/knowledge-center/api-gateway-429-limit/>

NEW QUESTION 14

- (Exam Topic 1)

A company has an organization in AWS Organizations that has a large number of AWS accounts. One of the AWS accounts is designated as a transit account and has a transit gateway that is shared with all of the other AWS accounts. AWS Site-to-Site VPN connections are configured between all of the company's global

offices and the transit account The company has AWS Config enabled on all of its accounts.

The company's networking team needs to centrally manage a list of internal IP address ranges that belong to the global offices Developers Will reference this list to gain access to applications securely.

Which solution meets these requirements with the LEAST amount of operational overhead?

- A. Create a JSON file that is hosted in Amazon S3 and that lists all of the internal IP address ranges Configure an Amazon Simple Notification Service (Amazon SNS) topic in each of the accounts that can be involved when the JSON file is update
- B. Subscribe an AWS Lambda function to the SNS topic to update all relevant security group rules with Vie updated IP address ranges.
- C. Create a new AWS Config managed rule that contains all of the internal IP address ranges Use the rule to check the security groups in each of the accounts to ensure compliance with the list of IP address range
- D. Configure the rule to automatically remediate any noncompliant security group that is detected.
- E. In the transit account, create a VPC prefix list with all of the internal IP address range
- F. Use AWS Resource Access Manager to share the prefix list with all of the other account
- G. Use the shared prefix list to configure security group rules is the other accounts.
- H. In the transit account create a security group with all of the internal IP address range
- I. Configure the security groups in me other accounts to reference the transit account's securitygroup by using a nested security group reference of *`<transit-account-id>/.sg-1a2b3c4d`".

Answer: C

Explanation:

Customer-managed prefix lists — Sets of IP address ranges that you define and manage. You can share your prefix list with other AWS accounts, enabling those accounts to reference the prefix list in their own resources. <https://docs.aws.amazon.com/vpc/latest/userguide/managed-prefix-lists.html>

a VPC prefix list is created in the transit account with all of the internal IP address ranges, and then shared to all of the other accounts using AWS Resource Access Manager. This allows for central management of the IP address ranges, and eliminates the need for manual updates to security group rules in each account. This solution also allows for compliance checks to be run using AWS Config and for any non-compliant security groups to be automatically remediated.

NEW QUESTION 17

- (Exam Topic 1)

A solutions architect has developed a web application that uses an Amazon API Gateway Regional endpoint and an AWS Lambda function. The consumers of the web application are all close to the AWS Region where the application will be deployed. The Lambda function only queries an Amazon Aurora MySQL database. The solutions architect has configured the database to have three read replicas.

During testing, the application does not meet performance requirements. Under high load, the application opens a large number of database connections. The solutions architect must improve the application's performance.

Which actions should the solutions architect take to meet these requirements? (Choose two.)

- A. Use the cluster endpoint of the Aurora database.
- B. Use RDS Proxy to set up a connection pool to the reader endpoint of the Aurora database.
- C. Use the Lambda Provisioned Concurrency feature.
- D. Move the code for opening the database connection in the Lambda function outside of the event handler.
- E. Change the API Gateway endpoint to an edge-optimized endpoint.

Answer: BD

Explanation:

Connect to RDS outside of Lambda handler method to improve performance <https://awstut.com/en/2022/04/30/connect-to-rds-outside-of-lambda-handler-method-to-improve-performance-en>

Using RDS Proxy, you can handle unpredictable surges in database traffic. Otherwise, these surges might cause issues due to oversubscribing connections or creating new connections at a fast rate. RDS Proxy establishes a database connection pool and reuses connections in this pool. This approach avoids the memory and CPU overhead of opening a new database connection each time. To protect the database against oversubscription, you can control the number of database connections that are created. <https://docs.aws.amazon.com/AmazonRDS/latest/AuroraUserGuide/rds-proxy.html>

NEW QUESTION 19

- (Exam Topic 1)

A life sciences company is using a combination of open source tools to manage data analysis workflows and Docker containers running on servers in its on-premises data center to process genomics data Sequencing data is generated and stored on a local storage area network (SAN), and then the data is processed. The research and development teams are running into capacity issues and have decided to re-architect their genomics analysis platform on AWS to scale based on workload demands and reduce the turnaround time from weeks to days

The company has a high-speed AWS Direct Connect connection Sequencers will generate around 200 GB of data for each genome, and individual jobs can take several hours to process the data with ideal compute capacity. The end result will be stored in Amazon S3. The company is expecting 10-15 job requests each day Which solution meets these requirements?

- A. Use regularly scheduled AWS Snowball Edge devices to transfer the sequencing data into AWS When AWS receives the Snowball Edge device and the data is loaded into Amazon S3 use S3 events to trigger an AWS Lambda function to process the data
- B. Use AWS Data Pipeline to transfer the sequencing data to Amazon S3 Use S3 events to trigger an Amazon EC2 Auto Scaling group to launch custom-AMI EC2 instances running the Docker containers to process the data
- C. Use AWS DataSync to transfer the sequencing data to Amazon S3 Use S3 events to trigger an AWS Lambda function that starts an AWS Step Functions workflow Store the Docker images in Amazon Elastic Container Registry (Amazon ECR) and trigger AWS Batch to run the container and process the sequencing data
- D. Use an AWS Storage Gateway file gateway to transfer the sequencing data to Amazon S3 Use S3 events to trigger an AWS Batch job that runs on Amazon EC2 instances running the Docker containers to process the data

Answer: C

Explanation:

AWS DataSync can be used to transfer the sequencing data to Amazon S3, which is a more efficient and faster method than using Snowball Edge devices. Once the data is in S3, S3 events can trigger an AWS Lambda function that starts an AWS Step Functions workflow. The Docker images can be stored in Amazon Elastic Container Registry (Amazon ECR) and AWS Batch can be used to run the container and process the sequencing data.

NEW QUESTION 20

- (Exam Topic 1)

A company is planning to migrate its business-critical applications from an on-premises data center to AWS. The company has an on-premises installation of a Microsoft SQL Server Always On cluster. The company wants to migrate to an AWS managed database service. A solutions architect must design a heterogeneous database migration on AWS.

Which solution will meet these requirements?

- A. Migrate the SQL Server databases to Amazon RDS for MySQL by using backup and restore utilities.
- B. Use an AWS Snowball Edge Storage Optimized device to transfer data to Amazon S3. Set up Amazon RDS for MySQL
- C. Use S3 integration with SQL Server features, such as BULK INSERT.
- D. Use the AWS Schema Conversion Tool to translate the database schema to Amazon RDS for MySQL
- E. Then use AWS Database Migration Service (AWS DMS) to migrate the data from on-premises databases to Amazon RDS.
- F. Use AWS DataSync to migrate data over the network between on-premises storage and Amazon S3. Set up Amazon RDS for MySQL
- G. Use S3 integration with SQL Server features, such as BULK INSERT.

Answer: C

Explanation:

<https://aws.amazon.com/dms/schema-conversion-tool/>

AWS Schema Conversion Tool (SCT) can automatically convert the database schema from Microsoft SQL Server to Amazon RDS for MySQL. This allows for a smooth transition of the database schema without any manual intervention. AWS DMS can then be used to migrate the data from the on-premises databases to the newly created Amazon RDS for MySQL instance. This service can perform a one-time migration of the data or can set up ongoing replication of data changes to keep the on-premises and AWS databases in sync.

NEW QUESTION 21

- (Exam Topic 1)

An enterprise company wants to allow its developers to purchase third-party software through AWS Marketplace. The company uses an AWS Organizations account structure with full features enabled, and has a shared services account in each organizational unit (OU) that will be used by procurement managers. The procurement team's policy indicates that developers should be able to obtain third-party software from an approved list only and use Private Marketplace in AWS Marketplace to achieve this requirement. The procurement team wants administration of Private Marketplace to be restricted to a role named procurement-manager-role, which could be assumed by procurement managers. Other IAM users, groups, roles, and account administrators in the company should be denied Private Marketplace administrative access.

What is the MOST efficient way to design an architecture to meet these requirements?

- A. Create an IAM role named procurement-manager-role in all AWS accounts in the organization. Add the PowerUserAccess managed policy to the role. Apply an inline policy to all IAM users and roles in every AWS account to deny permissions on the AWSPrivateMarketplaceAdminFullAccess managed policy.
- B. Create an IAM role named procurement-manager-role in all AWS accounts in the organization. Add the AdministratorAccess managed policy to the role. Define a permissions boundary with the AWSPrivateMarketplaceAdminFullAccess managed policy and attach it to all the developer roles.
- C. Create an IAM role named procurement-manager-role in all the shared services accounts in the organization. Add the AWSPrivateMarketplaceAdminFullAccess managed policy to the role. Create an organization root-level SCP to deny permissions to administer Private Marketplace to everyone except the role named procurement-manager-role. Create another organization root-level SCP to deny permissions to create an IAM role named procurement-manager-role to everyone in the organization.
- D. Create an IAM role named procurement-manager-role in all AWS accounts that will be used by developer.
- E. Add the AWSPrivateMarketplaceAdminFullAccess managed policy to the role.
- F. Create an SCP in Organizations to deny permissions to administer Private Marketplace to everyone except the role named procurement-manager-role.
- G. Apply the SCP to all the shared services accounts in the organization.

Answer: C

Explanation:

SCP to deny permissions to administer Private Marketplace to everyone except the role named procurement-manager-role.

<https://aws.amazon.com/blogs/aws/marketplace/controlling-access-to-a-well-architected-private-marketplace-usi>

This approach allows the procurement managers to assume the procurement-manager-role in shared services accounts, which have the AWSPrivateMarketplaceAdminFullAccess managed policy attached to it and can then manage the Private Marketplace. The organization root-level SCP denies the permission to administer Private Marketplace to everyone except the role named procurement-manager-role and another SCP denies the permission to create an IAM role named procurement-manager-role to everyone in the organization, ensuring that only the procurement team can assume the role and manage the Private Marketplace. This approach provides a centralized way to manage and restrict access to Private Marketplace while maintaining a high level of security.

NEW QUESTION 25

- (Exam Topic 1)

A company wants to migrate an application to Amazon EC2 from VMware Infrastructure that runs in an on-premises data center. A solutions architect must preserve the software and configuration settings during the migration.

What should the solutions architect do to meet these requirements?

- A. Configure the AWS DataSync agent to start replicating the data store to Amazon FSx for Windows FileServer. Use the SMB share to host the VMware data store.
- B. Use VM Import/Export to move the VMs to Amazon EC2.
- C. Use the VMware vSphere client to export the application as an image in Open Virtualization Format (OVF) format. Create an Amazon S3 bucket to store the image in the destination AWS Region.
- D. Create and apply an IAM role for VM Import. Use the AWS CLI to run the EC2 import command.
- E. . Configure AWS Storage Gateway for file service to export a Common Internet File System (CIFS) share.
- F. Create a backup copy to the shared folder.
- G. Sign in to the AWS Management Console and create an AMI from the backup copy. Launch an EC2 instance that is based on the AMI.
- H. Create a managed-instance activation for a hybrid environment in AWS Systems Manager.
- I. Download and install Systems Manager Agent on the on-premises VM. Register the VM with Systems Manager to be a managed instance. Use AWS Backup to create a snapshot of the VM and create an AMI.
- J. Launch an EC2 instance that is based on the AMI.

Answer: D

Explanation:

<https://docs.aws.amazon.com/vm-import/latest/userguide/vmimport-image-import.html>

- Export an OVF Template

- Create / use an Amazon S3 bucket for storing the exported images. The bucket must be in the Region where you want to import your VMs.
- Create an IAM role named vmimport.
- You'll use AWS CLI to run the import commands. <https://aws.amazon.com/premiumsupport/knowledge-center/import-instances/>

NEW QUESTION 28

- (Exam Topic 1)

A company uses Amazon S3 to store files and images in a variety of storage classes. The company's S3 costs have increased substantially during the past year. A solutions architect needs to review data trends for the past 12 months and identify the appropriate storage class for the objects. Which solution will meet these requirements?

- A. Download AWS Cost and Usage Reports for the last 12 months of S3 usage
- B. Review AWS Trusted Advisor recommendations for cost savings.
- C. Use S3 storage class analysis
- D. Import data trends into an Amazon QuickSight dashboard to analyze storage trends.
- E. Use Amazon S3 Storage Lens
- F. Upgrade the default dashboard to include advanced metrics for storage trends.
- G. Use Access Analyzer for S3. Download the Access Analyzer for S3 report for the last 12 months
- H. Import the csvfile to an Amazon QuickSight dashboard.

Answer: B

Explanation:

https://docs.aws.amazon.com/AmazonS3/latest/userguide/storage_lens.html

NEW QUESTION 32

- (Exam Topic 1)

A company plans to refactor a monolithic application into a modern application designed to be deployed on AWS. The CI/CD pipeline needs to be upgraded to support the modern design for the application with the following requirements

- It should allow changes to be released several times every hour.
 - * It should be able to roll back the changes as quickly as possible
- Which design will meet these requirements?

- A. Deploy a CI-CD pipeline that incorporates AMIs to contain the application and their configurations. Deploy the application by replacing Amazon EC2 instances
- B. Specify AWS Elastic Beanstalk to manage the application in a secondary environment as the deployment target for the CI/CD pipeline of the application
- C. To deploy, swap the staging and production environment URLs.
- D. Use AWS Systems Manager to re-provision the infrastructure for each deployment. Update the Amazon EC2 user data to pull the latest code artifact from Amazon S3 and use Amazon Route 53 weighted routing to point to the new environment
- E. Roll out application updates as part of an Auto Scaling event using prebuilt AMI
- F. Use new versions of the AMIs to add instances, and phase out all instances that use the previous AMI version with the configured termination policy during a deployment event.

Answer: B

Explanation:

It is the fastest when it comes to rollback and deploying changes every hour

NEW QUESTION 35

- (Exam Topic 1)

A company that uses AWS Organizations allows developers to experiment on AWS. As part of the landing zone that the company has deployed, developers use their company email address to request an account. The company wants to ensure that developers are not launching costly services or running services unnecessarily. The company must give developers a fixed monthly budget to limit their AWS costs. Which combination of steps will meet these requirements? (Choose three.)

- A. Create an SCP to set a fixed monthly account usage limit
- B. Apply the SCP to the developer accounts.
- C. Use AWS Budgets to create a fixed monthly budget for each developer's account as part of the account creation process.
- D. Create an SCP to deny access to costly services and components
- E. Apply the SCP to the developer accounts.
- F. Create an IAM policy to deny access to costly services and components
- G. Apply the IAM policy to the developer accounts.
- H. Create an AWS Budgets alert action to terminate services when the budgeted amount is reached. Configure the action to terminate all services.
- I. Create an AWS Budgets alert action to send an Amazon Simple Notification Service (Amazon SNS) notification when the budgeted amount is reached
- J. Invoke an AWS Lambda function to terminate all services.

Answer: BCF

Explanation:

- Option A is incorrect because creating an SCP to set a fixed monthly account usage limit is not possible. SCPs are policies that specify the services and actions that users and roles can use in the member accounts of an AWS Organization. SCPs cannot enforce budget limits or prevent users from launching costly services or running services unnecessarily
- Option B is correct because using AWS Budgets to create a fixed monthly budget for each developer's account as part of the account creation process meets the requirement of giving developers a fixed monthly budget to limit their AWS costs. AWS Budgets allows you to plan your service usage, service costs, and instance reservations. You can create budgets that alert you when your costs or usage exceed (or are forecasted to exceed) your budgeted amount
- Option C is correct because creating an SCP to deny access to costly services and components meets the requirement of ensuring that developers are not launching costly services or running services unnecessarily. SCPs can restrict access to certain AWS services or actions based on conditions such as region, resource tags, or request time. For example, an SCP can deny access to Amazon Redshift clusters or Amazon EC2 instances with certain instance types
- Option D is incorrect because creating an IAM policy to deny access to costly services and components is not sufficient to meet the requirement of ensuring

that developers are not launching costly services or running services unnecessarily. IAM policies can only control access to resources within a single AWS account. If developers have multiple accounts or can create new accounts, they can bypass the IAM policy restrictions. SCPs can apply across multiple accounts within an AWS Organization and prevent users from creating new accounts that do not comply with the SCP rules3

➤ Option E is incorrect because creating an AWS Budgets alert action to terminate services when the budgeted amount is reached is not possible. AWS Budgets alert actions can only perform one of the following actions: apply an IAM policy, apply an SCP, or send a notification through Amazon SNS. AWS Budgets alert actions cannot terminate services directly.

➤ Option F is correct because creating an AWS Budgets alert action to send an Amazon SNS notification when the budgeted amount is reached and invoking an AWS Lambda function to terminate all services meets the requirement of giving developers a fixed monthly budget to limit their AWS costs. AWS Budgets alert actions can send notifications through Amazon SNS when a budget threshold is breached. Amazon SNS can trigger an AWS Lambda function that can perform custom logic such as terminating all services in the developer's account. This way, developers cannot exceed their budget limit and incur additional costs.

References: 1: https://docs.aws.amazon.com/organizations/latest/userguide/orgs_manage_policies_scps.html 2

: <https://docs.aws.amazon.com/awsaccountbilling/latest/aboutv2/budgets-create.html> 3: <https://docs.aws.amazon.com/IAM/latest/UserGuide/introduction.html> :

<https://docs.aws.amazon.com/cost-management/latest/userguide/budgets-actions.html> : <https://docs.aws.amazon.com/sns/latest/dg/sns-lambda.html> :

<https://docs.aws.amazon.com/lambda/latest/dg/welcome.html>

NEW QUESTION 38

- (Exam Topic 1)

A company runs its application in the eu-west-1 Region and has one account for each of its environments development, testing, and production All the environments are running 24 hours a day 7 days a week by using stateful Amazon EC2 instances and Amazon RDS for MySQL databases The databases are between 500 GB and 800 GB in size

The development team and testing team work on business days during business hours, but the production environment operates 24 hours a day. 7 days a week. The company wants to reduce costs AH resources are tagged with an environment tag with either development, testing, or production as the key. What should a solutions architect do to reduce costs with the LEAST operational effort?

- A. Create an Amazon EventBridge (Amazon CloudWatch Events) rule that runs once every day Configure the rule to invoke one AWS Lambda function that starts or stops instances based on the tag day and time.
- B. Create an Amazon EventBridge (Amazon CloudWatch Events) rule that runs every business day in the evening
- C. Configure the rule to invoke an AWS Lambda function that stops instances based on the tag Create a second EventBridge (CloudWatch Events) rule that runs every business day in the morning Configure the second rule to invoke another Lambda function that starts instances based on the tag
- D. Create an Amazon EventBridge (Amazon CloudWatch Events) rule that runs every business day in the evening Configure the rule to invoke an AWS Lambda function that terminates instances based on the tag Create a second EventBridge (CloudWatch Events) rule that runs every business day in the morning Configure the second rule to invoke another Lambda function that restores the instances from their last backup based on the tag.
- E. Create an Amazon EventBridge rule that runs every hour
- F. Configure the rule to invoke one AWS Lambda function that terminates or restores instances from their last backup based on the tag
- G. day, and time.

Answer: B

Explanation:

Creating an Amazon EventBridge rule that runs every business day in the evening to stop instances and another rule that runs every business day in the morning to start instances based on the tag will reduce costs with the least operational effort. This approach allows for instances to be stopped during non-business hours when they are not in use, reducing the costs associated with running them. It also allows for instances to be started again in the morning when the development and testing teams need to use them.

NEW QUESTION 40

- (Exam Topic 1)

A financial services company receives a regular data feed from its credit card servicing partner Approximately 5.1 records are sent every 15 minutes in plaintext, delivered over HTTPS directly into an Amazon S3 bucket with server-side encryption. This feed contains sensitive credit card primary account number (PAN) data The company needs to automatically mask the PAN before sending the data to another S3 bucket for additional internal processing. The company also needs to remove and merge specific fields, and then transform the record into JSON format Additionally, extra feeds are likely to be added in the future, so any design needs to be easily expandable.

Which solutions will meet these requirements?

- A. Trigger an AWS Lambda function on file delivery that extracts each record and writes it to an Amazon SQS queue
- B. Trigger another Lambda function when new messages arrive in the SQS queue to process the records, writing the results to a temporary location in Amazon S3. Trigger a final Lambda function once the SQS queue is empty to transform the records into JSON format and send the results to another S3 bucket for internal processing.
- C. Trigger an AWS Lambda function on file delivery that extracts each record and writes it to an Amazon SQS queue
- D. Configure an AWS Fargate container application to automatically scale to a single instance when the SQS queue contains message
- E. Have the application process each record, and transform the record into JSON format
- F. When the queue is empty, send the results to another S3 bucket for internal processing and scale down the AWS Fargate instance.
- G. Create an AWS Glue crawler and custom classifier based on the data feed formats and build a table definition to match
- H. Trigger an AWS Lambda function on file delivery to start an AWS Glue ETL job to transform the entire record according to the processing and transformation requirement
- I. Define the output format as JSON
- J. Once complete, have the ETL job send the results to another S3 bucket for internal processing.
- K. Create an AWS Glue crawler and custom classifier based upon the data feed formats and build a table definition to match
- L. Perform an Amazon Athena query on file delivery to start an Amazon EMR ETL job to transform the entire record according to the processing and transformation requirement
- M. Define the output format as JSON
- N. Once complete, send the results to another S3 bucket for internal processing and scale down the EMR cluster.

Answer: C

Explanation:

You can use a Glue crawler to populate the AWS Glue Data Catalog with tables. The Lambda function can be triggered using S3 event notifications when object create events occur. The Lambda function will then trigger the Glue ETL job to transform the records masking the sensitive data and modifying the output format to JSON. This solution meets all requirements.

NEW QUESTION 43

- (Exam Topic 1)

A company runs a Python script on an Amazon EC2 instance to process data. The script runs every 10 minutes. The script ingests files from an Amazon S3 bucket and processes the files. On average, the script takes approximately 5 minutes to process each file. The script will not reprocess a file that the script has already processed. The company reviewed Amazon CloudWatch metrics and noticed that the EC2 instance is idle for approximately 40% of the time because of the file processing speed. The company wants to make the workload highly available and scalable. The company also wants to reduce long-term management overhead. Which solution will meet these requirements MOST cost-effectively?

- A. Migrate the data processing script to an AWS Lambda function
- B. Use an S3 event notification to invoke the Lambda function to process the objects when the company uploads the objects.
- C. Create an Amazon Simple Queue Service (Amazon SQS) queue
- D. Configure Amazon S3 to send event notifications to the SQS queue
- E. Create an EC2 Auto Scaling group with a minimum size of one instance
- F. Update the data processing script to poll the SQS queue
- G. Process the S3 objects that the SQS message identifies.
- H. Migrate the data processing script to a container image
- I. Run the data processing container on an EC2 instance
- J. Configure the container to poll the S3 bucket for new objects and to process the resulting objects.
- K. Migrate the data processing script to a container image that runs on Amazon Elastic Container Service (Amazon ECS) on AWS Fargate
- L. Create an AWS Lambda function that calls the Fargate RunTaskAPI operation when the container processes the file
- M. Use an S3 event notification to invoke the Lambda function.

Answer: D

Explanation:

migrating the data processing script to an AWS Lambda function and using an S3 event notification to invoke the Lambda function to process the objects when the company uploads the objects. This solution meets the company's requirements of high availability and scalability, as well as reducing long-term management overhead, and is likely to be the most cost-effective option.

NEW QUESTION 46

- (Exam Topic 1)

A company is creating a sequel for a popular online game. A large number of users from all over the world will play the game within the first week after launch. Currently, the game consists of the following components deployed in a single AWS Region:

- Amazon S3 bucket that stores game assets
- Amazon DynamoDB table that stores player scores

A solutions architect needs to design a multi-Region solution that will reduce latency improve reliability, and require the least effort to implement. What should the solutions architect do to meet these requirements?

- A. Create an Amazon CloudFront distribution to serve assets from the S3 bucket. Configure S3 Cross-Region Replication. Create a new DynamoDB table in a new Region. Use the new table as a replica target for DynamoDB global tables.
- B. Create an Amazon CloudFront distribution to serve assets from the S3 bucket.
- C. Configure S3 Same-Region Replication.
- D. Create a new DynamoDB table in a new Region.
- E. Configure asynchronous replication between the DynamoDB tables by using AWS Database Migration Service (AWS DMS) with change data capture (CDC).
- F. Create another S3 bucket in a new Region and configure S3 Cross-Region Replication between the buckets. Create an Amazon CloudFront distribution and configure origin failover with two origins accessing the S3 buckets in each Region.
- G. Configure DynamoDB global tables by enabling Amazon DynamoDB Streams, and add a replica table in a new Region.
- H. Create another S3 bucket in the same Region, and configure S3 Same-Region Replication between the buckets. Create an Amazon CloudFront distribution and configure origin failover with two origins accessing the S3 buckets. Create a new DynamoDB table in a new Region. Use the new table as a replica target for DynamoDB global tables.

Answer: C

Explanation:

https://aws.amazon.com/premiumsupport/knowledge-center/dynamodb-global-table-stream-lambda/?nc1=h_ls

NEW QUESTION 48

- (Exam Topic 1)

A company is hosting a monolithic REST-based API for a mobile app on five Amazon EC2 instances in public subnets of a VPC. Mobile clients connect to the API by using a domain name that is hosted on Amazon Route 53. The company has created a Route 53 multivalue answer routing policy with the IP addresses of all the EC2 instances. Recently, the app has been overwhelmed by large and sudden increases in traffic. The app has not been able to keep up with the traffic. A solutions architect needs to implement a solution so that the app can handle the new and varying load. Which solution will meet these requirements with the LEAST operational overhead?

- A. Separate the API into individual AWS Lambda functions
- B. Configure an Amazon API Gateway REST API with Lambda integration for the backend
- C. Update the Route 53 record to point to the API Gateway API.
- D. Containerize the API logic
- E. Create an Amazon Elastic Kubernetes Service (Amazon EKS) cluster
- F. Run the containers in the cluster by using Amazon EC2. Create a Kubernetes ingress
- G. Update the Route 53 record to point to the Kubernetes ingress.
- H. Create an Auto Scaling group
- I. Place all the EC2 instances in the Auto Scaling group
- J. Configure the Auto Scaling group to perform scaling actions that are based on CPU utilization
- K. Create an AWS Lambda function that reacts to Auto Scaling group changes and updates the Route 53 record.
- L. Create an Application Load Balancer (ALB) in front of the API
- M. Move the EC2 instances to private subnets in the VPC
- N. Add the EC2 instances as targets for the ALB
- O. Update the Route 53 record to point to the ALB.

Answer: D

Explanation:

By breaking down the monolithic API into individual Lambda functions and using API Gateway to handle the incoming requests, the solution can automatically scale to handle the new and varying load without the need for manual scaling actions. Additionally, this option will automatically handle the traffic without the need of having EC2 instances running all the time and only pay for the number of requests and the duration of the execution of the Lambda function.

By updating the Route 53 record to point to the API Gateway, the solution can handle the traffic and also it will direct the traffic to the correct endpoint.

NEW QUESTION 49

- (Exam Topic 1)

A financial services company in North America plans to release a new online web application to its customers on AWS . The company will launch the application in the us-east-1 Region on Amazon EC2 instances. The application must be highly available and must dynamically scale to meet user traffic. The company also wants to implement a disaster recovery environment for the application in the us-west-1 Region by using active-passive failover.

Which solution will meet these requirements?

- A. Create a VPC in us-east-1 and a VPC in us-west-1 Configure VPC peering In the us-east-1 VP
- B. create an Application Load Balancer (ALB) that extends across multiple Availability Zones in both VPCs Create an Auto Scaling group that deploys the EC2 instances across the multiple Availability Zones in both VPCs Place the Auto Scaling group behind the ALB.
- C. Create a VPC in us-east-1 and a VPC in us-west-1. In the us-east-1 VP
- D. create an Application Load Balancer (ALB) that extends across multiple Availability Zones in that VP
- E. Create an Auto Scaling group that deploys the EC2 instances across the multiple Availability Zones in the us-east-1 VPC Place the Auto Scaling group behind the ALB Set up the same configuration in the us-west-1 VP
- F. Create an Amazon Route 53 hosted zone Create separate records for each ALB Enable health checks to ensure high availability between Regions.
- G. Create a VPC in us-east-1 and a VPC in us-west-1 In the us-east-1 VP
- H. create an Application Load Balancer (ALB) that extends across multiple Availability Zones in that VPC Create an Auto Scaling group that deploys the EC2 instances across the multiple Availability Zones in the us-east-1 VPC Place the Auto Scaling group behind the ALB Set up the same configuration in the us-west-1 VPC Create an Amazon Route 53 hosted zon
- I. Create separate records for each ALB Enable health checks and configure a failover routing policy for each record.
- J. Create a VPC in us-east-1 and a VPC in us-west-1 Configure VPC peering In the us-east-1 VP
- K. create an Application Load Balancer (ALB) that extends across multiple Availability Zones in Create an Auto Scaling group that deploys the EC2 instances across the multiple Availability Zones in both VPCs Place the Auto Scaling group behind the ALB Create an Amazon Route 53 host.. Create a record for the ALB.

Answer: C

Explanation:

it's the one that handles failover while B (the one shown as the answer today) it almost the same but does not handle failover.

NEW QUESTION 54

- (Exam Topic 1)

A company is using multiple AWS accounts The DNS records are stored in a private hosted zone for Amazon Route 53 in Account A The company's applications and databases are running in Account B.

A solutions architect win deploy a two-net application In a new VPC To simplify the configuration, the db.example.com CNAME record set tor the Amazon RDS endpoint was created in a private hosted zone for Amazon Route 53.

During deployment, the application failed to start. Troubleshooting revealed that db.example.com is not resolvable on the Amazon EC2 instance The solutions architect confirmed that the record set was created correctly in Route 53.

Which combination of steps should the solutions architect take to resolve this issue? (Select TWO)

- A. Deploy the database on a separate EC2 instance in the new VPC Create a record set for the instance's private IP in the private hosted zone
- B. Use SSH to connect to the application tier EC2 instance Add an RDS endpoint IP address to the/etc/resolv.conf file
- C. Create an authorization lo associate the private hosted zone in Account A with the new VPC In Account B
- D. Create a private hosted zone for the example.com domain m Account B Configure Route 53 replication between AWS accounts
- E. Associate a new VPC in Account B with a hosted zone in Account
- F. Delete the association authorization In Account A.

Answer: CE

Explanation:

<https://aws.amazon.com/premiumsupport/knowledge-center/private-hosted-zone-different-account/>

NEW QUESTION 56

- (Exam Topic 1)

A company has applications in an AWS account that is named Source. The account is in an organization in AWS Organizations. One of the applications uses AWS Lambda functions and store's inventory data in an Amazon Aurora database. The application deploys the Lambda functions by using a deployment package. The company has configured automated backups for Aurora.

The company wants to migrate the Lambda functions and the Aurora database to a new AWS account that is named Target. The application processes critical data, so the company must minimize downtime.

Which solution will meet these requirements?

- A. Download the Lambda function deployment package from the Source account
- B. Use the deployment package and create new Lambda functions in the Target account
- C. Share the automated Aurora DB cluster snapshot with the Target account.
- D. Download the Lambda function deployment package from the Source account
- E. Use the deployment package and create new Lambda functions in the Target account Share the Aurora DB cluster with the Target account by using AWS Resource Access Manager (AWS RAM). Grant the Target account permission to clone the Aurora DB cluster.
- F. Use AWS Resource Access Manager (AWS RAM) to share the Lambda functions and the Aurora DB cluster with the Target account
- G. Grant the Target account permission to clone the Aurora DB cluster.
- H. Use AWS Resource Access Manager (AWS RAM) to share the Lambda functions with the Target account
- I. Share the automated Aurora DB cluster snapshot with the Target account.

Answer: C

Explanation:

This solution uses a combination of AWS Resource Access Manager (RAM) and automated backups to migrate the Lambda functions and the Aurora database to the Target account while minimizing downtime. In this solution, the Lambda function deployment package is downloaded from the Source account and used to create new Lambda functions in the Target account. The Aurora DB cluster is shared with the Target account using AWS RAM and the Target account is granted permission to clone the Aurora DB cluster, allowing for a new copy of the Aurora database to be created in the Target account. This approach allows for the data to be migrated to the Target account while minimizing downtime, as the Target account can use the cloned Aurora database while the original Aurora database continues to be used in the Source account.

NEW QUESTION 57

- (Exam Topic 1)

A company has purchased appliances from different vendors. The appliances all have IoT sensors. The sensors send status information in the vendors' proprietary formats to a legacy application that parses the information into JSON. The parsing is simple, but each vendor has a unique format. Once daily, the application parses all the JSON records and stores the records in a relational database for analysis.

The company needs to design a new data analysis solution that can deliver faster and optimize costs. Which solution will meet these requirements?

- A. Connect the IoT sensors to AWS IoT Core
- B. Set a rule to invoke an AWS Lambda function to parse the information and save a .csv file to Amazon S3. Use AWS Glue to catalog the file
- C. Use Amazon Athena and Amazon QuickSight for analysis.
- D. Migrate the application server to AWS Fargate, which will receive the information from IoT sensors and parse the information into a relational format
- E. Save the parsed information to Amazon Redshift for analysis.
- F. Create an AWS Transfer for SFTP server
- G. Update the IoT sensor code to send the information as a .csv file through SFTP to the server
- H. Use AWS Glue to catalog the file
- I. Use Amazon Athena for analysis.
- J. Use AWS Snowball Edge to collect data from the IoT sensors directly to perform local analysis. Periodically collect the data into Amazon Redshift to perform global analysis.

Answer: A

Explanation:

➤ Connect the IoT sensors to AWS IoT Core. Set a rule to invoke an AWS Lambda function to parse the information and save a .csv file to Amazon S3. Use AWS Glue to catalog the files. Use Amazon Athena and Amazon QuickSight for analysis. This solution meets the requirement of faster analysis and cost optimization by using AWS IoT Core to collect data from the IoT sensors in real-time and then using AWS Glue and Amazon Athena for efficient data analysis. This solution involves connecting the IoT sensors to the AWS IoT Core, setting a rule to invoke an AWS Lambda function to parse the information, and saving a .csv file to Amazon S3. AWS Glue can be used to catalog the files and Amazon Athena and Amazon QuickSight can be used for analysis. This solution will enable faster and more cost-effective data analysis.

This solution is in line with the official Amazon Textbook and Resources for the AWS Certified Solutions Architect - Professional certification. In particular, the book states that: "AWS IoT Core can be used to ingest and process the data, AWS Lambda can be used to process and transform the data, and Amazon S3 can be used to store the data. AWS Glue can be used to catalog and access the data, Amazon Athena can be used to query the data, and Amazon QuickSight can be used to visualize the data." (Source: [https://d1.awsstatic.com/training-and-certification/docs-sa-pro/AWS_Certified_Solutions_Architect_Professiona](https://d1.awsstatic.com/training-and-certification/docs-sa-pro/AWS_Certified_Solutions_Architect_Professional_Study_Guide.pdf)

NEW QUESTION 58

- (Exam Topic 1)

A video processing company wants to build a machine learning (ML) model by using 600 TB of compressed data that is stored as thousands of files in the company's on-premises network attached storage system. The company does not have the necessary compute resources on premises for ML experiments and wants to use AWS.

The company needs to complete the data transfer to AWS within 3 weeks. The data transfer will be a one-time transfer. The data must be encrypted in transit. The measured upload speed of the company's internet connection is 100 Mbps, and multiple departments share the connection.

Which solution will meet these requirements MOST cost-effectively?

- A. Order several AWS Snowball Edge Storage Optimized devices by using the AWS Management Console
- B. Configure the devices with a destination S3 bucket
- C. Copy the data to the device
- D. Ship the devices back to AWS.
- E. Set up a 10 Gbps AWS Direct Connect connection between the company location and the nearest AWS Region
- F. Transfer the data over a VPN connection into the Region to store the data in Amazon S3.
- G. Create a VPN connection between the on-premises network storage and the nearest AWS Region. Transfer the data over the VPN connection.
- H. Deploy an AWS Storage Gateway file gateway on premise
- I. Configure the file gateway with a destination S3 bucket
- J. Copy the data to the file gateway.

Answer: A

Explanation:

This solution will meet the requirements of the company as it provides a secure, cost-effective and fast way of transferring large data sets from on-premises to AWS. Snowball Edge devices encrypt the data during transfer, and the devices are shipped back to AWS for import into S3. This option is more cost effective than using Direct Connect or VPN connections as it does not require the company to pay for long-term dedicated connections.

NEW QUESTION 59

- (Exam Topic 1)

A retail company has an on-premises data center in Europe. The company also has a multi-Region AWS presence that includes the eu-west-1 and us-east-1 Regions. The company wants to be able to route network traffic from its on-premises infrastructure into VPCs in either of those Regions. The company also needs to support traffic that is routed directly between VPCs in those Regions. No single points of failure can exist on the network.

The company already has created two 1 Gbps AWS Direct Connect connections from its on-premises data center. Each connection goes into a separate Direct Connect location in Europe for high availability. These two locations are named DX-A and DX-B, respectively. Each Region has a single AWS Transit Gateway that is configured to route all inter-VPC traffic within that Region.

Which solution will meet these requirements?

- A. Create a private VIF from the DX-A connection into a Direct Connect gateway

- B. Create a private VIF from the DX-B connection into the same Direct Connect gateway for high availability
- C. Associate both the eu-west-1 and us-east-1 transit gateways with the Direct Connect gateway
- D. Peer the transit gateways with each other to support cross-Region routing.
- E. Create a transit VIF from the DX-A connection into a Direct Connect gateway
- F. Associate the eu-west-1 transit gateway with this Direct Connect gateway
- G. Create a transit VIF from the DX-B connection into a separate Direct Connect gateway
- H. Associate the us-east-1 transit gateway with this separate Direct Connect gateway
- I. Peer the Direct Connect gateways with each other to support high availability and cross-Region routing.
- J. Create a transit VIF from the DX-A connection into a Direct Connect gateway
- K. Create a transit VIF from the DX-B connection into the same Direct Connect gateway for high availability
- L. Associate both the eu-west-1 and us-east-1 transit gateways with this Direct Connect gateway
- M. Configure the Direct Connect gateway to route traffic between the transit gateways.
- N. Create a transit VIF from the DX-A connection into a Direct Connect gateway
- O. Create a transit VIF from the DX-B connection into the same Direct Connect gateway for high availability
- P. Associate both the eu-west-1 and us-east-1 transit gateways with this Direct Connect gateway
- Q. Peer the transit gateways with each other to support cross-Region routing.

Answer: D

Explanation:

In this solution, two transit VIFs are created - one from the DX-A connection and one from the DX-B connection - into the same Direct Connect gateway for high availability. Both the eu-west-1 and us-east-1 transit gateways are then associated with this Direct Connect gateway. The transit gateways are then peered with each other to support cross-Region routing. This solution meets the requirements of the company by creating a highly available connection between the on-premises data center and the VPCs in both the eu-west-1 and us-east-1 regions, and by enabling direct traffic routing between VPCs in those regions.

NEW QUESTION 64

- (Exam Topic 1)

A company is processing videos in the AWS Cloud by using Amazon EC2 instances in an Auto Scaling group. It takes 30 minutes to process a video. Several EC2 instances scale in and out depending on the number of videos in an Amazon Simple Queue Service (Amazon SQS) queue.

The company has configured the SQS queue with a redrive policy that specifies a target dead-letter queue and a maxReceiveCount of 1. The company has set the visibility timeout for the SQS queue to 1 hour. The company has set up an Amazon CloudWatch alarm to notify the development team when there are messages in the dead-letter queue.

Several times during the day, the development team receives notification that messages are in the dead-letter queue and that videos have not been processed properly. An investigation finds no errors in the application logs.

How can the company solve this problem?

- A. Turn on termination protection for the EC2 instances.
- B. Update the visibility timeout for the SQS queue to 3 hours.
- C. Configure scale-in protection for the instances during processing.
- D. Update the redrive policy and set maxReceiveCount to 0.

Answer: B

Explanation:

The best solution for this problem is to update the visibility timeout for the SQS queue to 3 hours. This is because when the visibility timeout is set to 1 hour, it means that if the EC2 instance doesn't process the message within an hour, it will be moved to the dead-letter queue. By increasing the visibility timeout to 3 hours, this should give the EC2 instance enough time to process the message before it gets moved to the dead-letter queue. Additionally, configuring scale-in protection for the EC2 instances during processing will help to ensure that the instances are not terminated while the messages are being processed.

NEW QUESTION 68

- (Exam Topic 1)

A retail company is operating its ecommerce application on AWS. The application runs on Amazon EC2 instances behind an Application Load Balancer (ALB). The company uses an Amazon RDS DB instance as the database backend. Amazon CloudFront is configured with one origin that points to the ALB. Static content is cached. Amazon Route 53 is used to host all public zones.

After an update of the application, the ALB occasionally returns a 502 status code (Bad Gateway) error. The root cause is malformed HTTP headers that are returned to the ALB. The webpage returns successfully when a solutions architect reloads the webpage immediately after the error occurs.

While the company is working on the problem, the solutions architect needs to provide a custom error page instead of the standard ALB error page to visitors. Which combination of steps will meet this requirement with the LEAST amount of operational overhead? (Choose two.)

- A. Create an Amazon S3 bucket
- B. Configure the S3 bucket to host a static webpage
- C. Upload the custom error pages to Amazon S3.
- D. Create an Amazon CloudWatch alarm to invoke an AWS Lambda function if the ALB health check response Target.FailedHealthChecks is greater than 0. Configure the Lambda function to modify the forwarding rule at the ALB to point to a publicly accessible web server.
- E. Modify the existing Amazon Route 53 records by adding health check
- F. Configure a fallback target if the health check fails
- G. Modify DNS records to point to a publicly accessible webpage.
- H. Create an Amazon CloudWatch alarm to invoke an AWS Lambda function if the ALB health check response Elb.InternalError is greater than 0. Configure the Lambda function to modify the forwarding rule at the ALB to point to a publicly accessible web server.
- I. Add a custom error response by configuring a CloudFront custom error page
- J. Modify DNS records to point to a publicly accessible web page.

Answer: CE

Explanation:

"Save your custom error pages in a location that is accessible to CloudFront. We recommend that you store them in an Amazon S3 bucket, and that you don't store them in the same place as the rest of your website or application's content. If you store the custom error pages on the same origin as your website or application, and the origin starts to return 5xx errors, CloudFront can't get the custom error pages because the origin server is unavailable."

<https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/GeneratingCustomErrorResponses.htm>

NEW QUESTION 73

- (Exam Topic 1)

A solutions architect needs to implement a client-side encryption mechanism for objects that will be stored in a new Amazon S3 bucket. The solutions architect created a CMK that is stored in AWS Key Management Service (AWS KMS) for this purpose.

The solutions architect created the following IAM policy and attached it to an IAM role:

```
{
  "Version": "2012-10-17",
  "Statement": [
    {
      "Sid": "DownloadUpload",
      "Action": [
        "s3:GetObject",
        "s3:GetObjectVersion",
        "s3:PutObject",
        "s3:PutObjectAcl"
      ],
      "Effect": "Allow",
      "Resource": "arn:aws:s3:::BucketName/*"
    },
    {
      "Sid": "KMSAccess",
      "Action": [
        "kms:Decrypt",
        "kms:Encrypt"
      ],
      "Effect": "Allow",
      "Resource": "arn:aws:kms:us-east-1:123456789012:key/*"
    }
  ]
}
```

During tests, the solutions architect was able to successfully get existing test objects in the S3 bucket. However, attempts to upload a new object resulted in an error message. The error message stated that the action was forbidden.

Which action must the solutions architect add to the IAM policy to meet all the requirements?

- A. kms:GenerateDataKey
- B. kms:GetKeyPolicy
- C. kms:GetPublicKey
- D. kms:SKJn

Answer: A

Explanation:

<https://aws.amazon.com/premiumsupport/knowledge-center/s3-access-denied-error-kms/>

"An error occurred (AccessDenied) when calling the PutObject operation: Access Denied" This error message indicates that your IAM user or role needs permission for the kms:GenerateDataKey action.

NEW QUESTION 75

- (Exam Topic 1)

A company is planning to migrate 1,000 on-premises servers to AWS. The servers run on several VMware clusters in the company's data center. As part of the migration plan, the company wants to gather server metrics such as CPU details, RAM usage, operating system information, and running processes. The company then wants to query and analyze the data.

Which solution will meet these requirements?

- A. Deploy and configure the AWS Agentless Discovery Connector virtual appliance on the on-premises host
- B. Configure Data Exploration in AWS Migration Hub
- C. Use AWS Glue to perform an ETL job against the data
- D. Query the data by using Amazon S3 Select.
- E. Export only the VM performance information from the on-premises host
- F. Directly import the required data into AWS Migration Hub
- G. Update any missing information in Migration Hub
- H. Query the data by using Amazon QuickSight.
- I. Create a script to automatically gather the server information from the on-premises host
- J. Use the AWS CLI to run the put-resource-attributes command to store the detailed server data in AWS Migration Hub
- K. Query the data directly in the Migration Hub console.
- L. Deploy the AWS Application Discovery Agent to each on-premises server
- M. Configure Data Exploration in AWS Migration Hub
- N. Use Amazon Athena to run predefined queries against the data in Amazon S3.

Answer: D

Explanation:

➤ it covers all the requirements mentioned in the question, it will allow collecting the detailed metrics, including process information and it provides a way to query and analyze the data using Amazon Athena.

NEW QUESTION 76

- (Exam Topic 1)

A large company is running a popular web application. The application runs on several Amazon EC2 Linux Instances in an Auto Scaling group in a private subnet. An Application Load Balancer is targeting the Instances in the Auto Scaling group in the private subnet. AWS Systems Manager Session Manager is configured, and AWS Systems Manager Agent is running on all the EC2 instances.

The company recently released a new version of the application. Some EC2 instances are now being marked as unhealthy and are being terminated. As a result, the application is running at reduced capacity. A solutions architect tries to determine the root cause by analyzing Amazon CloudWatch logs that are collected from the application, but the logs are inconclusive.

How should the solutions architect gain access to an EC2 instance to troubleshoot the issue?

- A. Suspend the Auto Scaling group's HealthCheck scaling proces
- B. Use Session Manager to log in to an instance that is marked as unhealthy
- C. Enable EC2 instance termination protection Use Session Manager to log In to an instance that is marked as unhealthy.
- D. Set the termination policy to Oldestinstance on the Auto Scaling grou
- E. Use Session Manager to log in to an instance that is marked as unhealthy
- F. Suspend the Auto Scaling group's Terminate proces
- G. Use Session Manager to log in to an instance thatis marked as unhealthy

Answer: D

Explanation:

<https://docs.aws.amazon.com/autoscaling/ec2/userguide/as-suspend-resume-processes.html>

NEW QUESTION 79

- (Exam Topic 1)

A company needs to implement a patching process for its servers. The on-premises servers and Amazon EC2 instances use a variety of tools to perform patching. Management requires a single report showing the patch status of all the servers and instances. Which set of actions should a solutions architect take to meet these requirements?

- A. Use AWS Systems Manager to manage patches on the on-premises servers and EC2 instance
- B. Use Systems Manager to generate patch compliance reports.
- C. Use AWS OpsWorks to manage patches on the on-premises servers and EC2 instance
- D. Use Amazon QuickSight integration with OpsWorks to generate patch compliance reports.
- E. Use an Amazon EventBridge (Amazon CloudWatch Events) rule to apply patches by scheduling an AWS Systems Manager patch remediation jo
- F. Use Amazon Inspector to generate patch compliance reports.
- G. Use AWS OpsWorks to manage patches on the on-premises servers and EC2 instance
- H. Use AWS X-Ray to post the patch status to AWS Systems Manager OpsCenter to generate patch compliance reports.

Answer: A

Explanation:

<https://docs.aws.amazon.com/systems-manager/latest/userguide/systems-manager-patch.html>

NEW QUESTION 82

- (Exam Topic 1)

A company is building a serverless application that runs on an AWS Lambda function that is attached to a VPC. The company needs to integrate the application with a new service from an external provider. The external provider supports only requests that come from public IPv4 addresses that are in an allow list. The company must provide a single public IP address to the external provider before the application can start using the new service. Which solution will give the application the ability to access the new service?

- A. Deploy a NAT gatewa
- B. Associate an Elastic IP address with the NAT gatewa
- C. Configure the VPC to use the NAT gateway.
- D. Deploy an egress-only internet gatewa
- E. Associate an Elastic IP address with the egress-only internet gateway
- F. Configure the elastic network interface on the Lambda function to use the egress-only internet gateway.
- G. Deploy an internet gatewa
- H. Associate an Elastic IP address with the internet gatewa
- I. Configure theLambda function to use the internet gateway.
- J. Deploy an internet gatewa
- K. Associate an Elastic IP address with the internet gatewa
- L. Configure the default route in the public VPC route table to use the internet gateway.

Answer: A

Explanation:

This solution will give the Lambda function access to the internet by routing its outbound traffic through the NAT gateway, which has a public Elastic IP address. This will allow the external provider to whitelist the single public IP address associated with the NAT gateway, and enable the application to access the new service. Deploying a NAT gateway and associating an Elastic IP address with it, and then configuring the VPC to use the NAT gateway, will give the application the ability to access the new service. This is because the NAT gateway will be the single public IP address that the external provider needs for the allow list. The NAT gateway will allow the application to access the service, while keeping the underlying Lambda functions private. When configuring NAT gateways, you should ensure that the route table associated with the NAT gateway has a route to the internet gateway with a target of the internet gateway. Additionally, you should ensure that the security group associated with the NAT gateway allows outbound traffic from the Lambda functions.

References:

➤ AWS Certified Solutions Architect Professional Official Amazon Text Book [1], page 456
https://docs.aws.amazon.com/vpc/latest/userguide/VPC_NAT_Gateway.html

NEW QUESTION 86

- (Exam Topic 1)

A company has an organization in AWS Organizations. The company is using AWS Control Tower to deploy a landing zone for the organization. The company wants to implement governance and policy enforcement. The company must implement a policy that will detect Amazon RDS DB instances that are not encrypted at rest in the company's production OU. Which solution will meet this requirement?

- A. Turn on mandatory guardrails in AWS Control Towe
- B. Apply the mandatory guardrails to the production OU.
- C. Enable the appropriate guardrail from the list of strongly recommended guardrails in AWS Control Towe
- D. Apply the guardrail to the production OU.
- E. Use AWS Config to create a new mandatory guardrai

- F. Apply the rule to all accounts in the production OU.
- G. Create a custom SCP in AWS Control Tower
- H. Apply the SCP to the production OU.

Answer: B

Explanation:

AWS Control Tower provides a set of "strongly recommended guardrails" that can be enabled to implement governance and policy enforcement. One of these guardrails is "Encrypt Amazon RDS instances" which will detect RDS DB instances that are not encrypted at rest. By enabling this guardrail and applying it to the production OU, the company will be able to enforce encryption for RDS instances in the production environment.

NEW QUESTION 87

- (Exam Topic 1)

A global media company is planning a multi-Region deployment of an application. Amazon DynamoDB global tables will back the deployment to keep the user experience consistent across the two continents where users are concentrated. Each deployment will have a public Application Load Balancer (ALB). The company manages public DNS internally. The company wants to make the application available through an apex domain. Which solution will meet these requirements with the LEAST effort?

- A. Migrate public DNS to Amazon Route 53. Create CNAME records for the apex domain to point to the AL
- B. Use a geolocation routing policy to route traffic based on user location.
- C. Place a Network Load Balancer (NLB) in front of the AL
- D. Migrate public DNS to Amazon Route 53. Create a CNAME record for the apex domain to point to the NLB's static IP address
- E. Use a geolocation routing policy to route traffic based on user location.
- F. Create an AWS Global Accelerator accelerator with multiple endpoint groups that target endpoints in appropriate AWS Region
- G. Use the accelerator's static IP address to create a record in public DNS for the apex domain.
- H. Create an Amazon API Gateway API that is backed by AWS Lambda in one of the AWS Regions. Configure a Lambda function to route traffic to application deployments by using the round robin method
- I. Create CNAME records for the apex domain to point to the API's URL.

Answer: C

Explanation:

AWS Global Accelerator is a service that directs traffic to optimal endpoints (in this case, the Application Load Balancer) based on the health of the endpoints and network routing. It allows you to create an accelerator that directs traffic to multiple endpoint groups, one for each Region where the application is deployed. The accelerator uses the AWS global network to optimize the traffic routing to the healthy endpoint.

By using Global Accelerator, the company can use a single static IP address for the apex domain, and traffic will be directed to the optimal endpoint based on the user's location, without the need for additional load balancers or routing policies.

Reference:

AWS Global Accelerator documentation: <https://aws.amazon.com/global-accelerator/Routing-User-Traffic-to-the-Optimal-AWS-Region-using-Global-Accelerator-documentation/>

<https://aws.amazon.com/blogs/networking-and-content-delivery/routing-user-traffic-to-the-optimal-aws-region-u>

NEW QUESTION 90

- (Exam Topic 1)

A company has an on-premises website application that provides real estate information for potential renters and buyers. The website uses a Java backend and a NOSQL MongoDB database to store subscriber data.

The company needs to migrate the entire application to AWS with a similar structure. The application must be deployed for high availability, and the company cannot make changes to the application

Which solution will meet these requirements?

- A. use an Amazon Aurora DB cluster as the database for the subscriber data
- B. Deploy Amazon EC2 instances in an Auto Scaling group across multiple Availability Zones for the Java backend application.
- C. Use MongoDB on Amazon EC2 instances as the database for the subscriber data
- D. Deploy EC2 instances in an Auto Scaling group in a single Availability Zone for the Java backend application.
- E. Configure Amazon DocumentDB (with MongoDB compatibility) with appropriately sized instances in multiple Availability Zones as the database for the subscriber data
- F. Deploy Amazon EC2 instances in an Auto Scaling group across multiple Availability Zones for the Java backend application.
- G. Configure Amazon DocumentDB (with MongoDB compatibility) in on-demand capacity mode in multiple Availability Zones as the database for the subscriber data
- H. Deploy Amazon EC2 instances in an Auto Scaling group across multiple Availability Zones for the Java backend application.

Answer: C

Explanation:

On-demand capacity mode is the function of DocumentDB.

<https://aws.amazon.com/blogs/news/running-spiky-workloads-and-optimizing-costs-by-more-than-90-using-ama>

Amazon DocumentDB Elastic Clusters <https://aws.amazon.com/blogs/news/announcing-amazon-documentdb-elastic-clusters/>

Deploy Amazon EC2 instances in an Auto Scaling group across multiple Availability Zones for the Java backend application. This will provide high availability and scalability, while allowing the company to retain the same database structure as the original application.

NEW QUESTION 94

- (Exam Topic 1)

A company is storing data in several Amazon DynamoDB tables. A solutions architect must use a serverless architecture to make the data accessible publicly through a simple API over HTTPS. The solution must scale automatically in response to demand.

Which solutions meet these requirements? (Choose two.)

- A. Create an Amazon API Gateway REST API
- B. Configure this API with direct integrations to DynamoDB by using API Gateway's AWS integration type.
- C. Create an Amazon API Gateway HTTP API

- D. Configure this API with direct integrations to Dynamo DB by using API Gateway's AWS integration type.
- E. Create an Amazon API Gateway HTTP AP
- F. Configure this API with integrations to AWS Lambda functions that return data from the DynamoDB tables.
- G. Create an accelerator in AWS Global Accelerato
- H. Configure this accelerator with AWS Lambda@Edge function integrations that return data from the DynamoDB tables.
- I. Create a Network Load Balance
- J. Configure listener rules to forward requests to the appropriate AWS Lambda functions

Answer: AC

Explanation:

<https://docs.aws.amazon.com/apigateway/latest/developerguide/api-gateway-overview-developer-experience.htm>

NEW QUESTION 95

- (Exam Topic 1)

A company runs a proprietary stateless ETL application on an Amazon EC2 Linux instance. The application is a Linux binary, and the source code cannot be modified. The application is single-threaded, uses 2 GB of RAM. and is highly CPU intensive The application is scheduled to run every 4 hours and runs for up to 20 minutes A solutions architect wants to revise the architecture for the solution.

Which strategy should the solutions architect use?

- A. Use AWS Lambda to run the applicatio
- B. Use Amazon CloudWatch Logs to invoke the Lambda function every 4 hours.
- C. Use AWS Batch to run the applicatio
- D. Use an AWS Step Functions state machine to invoke the AWS Batch job every 4 hours.
- E. Use AWS Fargate to run the applicatio
- F. Use Amazon EventBridge (Amazon CloudWatch Events) to invoke the Fargate task every 4 hours.
- G. Use Amazon EC2 Spot Instances to run the applicatio
- H. Use AWS CodeDeploy to deploy and run the application every 4 hours.

Answer: C

Explanation:

step function could run a scheduled task when triggered by eventbrige, but why would you add that layer of complexity just to run aws batch when you could directly invoke it through eventbridge. The link provided - [https://aws.amazon.com/pt/blogs/compute/orchestrating-high-performance-computing-with-aws-step-](https://aws.amazon.com/pt/blogs/compute/orchestrating-high-performance-computing-with-aws-step-functions-) functions- makes sense only for HPC, this is a single instance that needs to be run

NEW QUESTION 98

- (Exam Topic 1)

A video processing company has an application that downloads images from an Amazon S3 bucket, processes the images, stores a transformed image in a second S3 bucket, and updates metadata about the image in an Amazon DynamoDB table. The application is written in Node.js and runs by using an AWS Lambda function. The Lambda function is invoked when a new image is uploaded to Amazon S3.

The application ran without incident for a while. However, the size of the images has grown significantly. The Lambda function is now failing frequently with timeout errors. The function timeout is set to its maximum value. A solutions architect needs to refactor the application's architecture to prevent invocation failures. The company does not want to manage the underlying infrastructure.

Which combination of steps should the solutions architect take to meet these requirements? (Choose two.)

- A. Modify the application deployment by building a Docker image that contains the application code.Publish the image to Amazon Elastic Container Registry (Amazon ECR).
- B. Create a new Amazon Elastic Container Service (Amazon ECS) task definition with a compatibility type of AWS Fargat
- C. Configure the task definition to use the new image in Amazon Elastic Container Registry (Amazon ECR). Adjust the Lambda function to invoke an ECS task by using the ECS task definition when a new file arrives in Amazon S3.
- D. Create an AWS Step Functions state machine with a Parallel state to invoke the Lambda function.Increase the provisioned concurrency of the Lambda function.
- E. Create a new Amazon Elastic Container Service (Amazon ECS) task definition with a compatibility type of Amazon EC2. Configure the task definition to use the new image in Amazon Elastic Container Registry (Amazon ECR). Adjust the Lambda function to invoke an ECS task by using the ECS task definition when a new file arrives in Amazon S3.
- F. Modify the application to store images on Amazon Elastic File System (Amazon EFS) and to store metadata on an Amazon RDS DB instanc
- G. Adjust the Lambda function to mount the EFS file share.

Answer: AB

Explanation:

A. Modify the application deployment by building a Docker image that contains the application code. Publish the image to Amazon Elastic Container Registry (Amazon ECR). - This step is necessary to package the application code in a container and make it available for running on ECS. B. Create a new Amazon Elastic Container Service (Amazon ECS) task definition with a compatibility type of AWS Fargate. Configure the task definition to use the new image in Amazon Elastic Container Registry (Amazon ECR). Adjust the Lambda function to invoke an ECS task by using the ECS task definition when a new file arrives in Amazon S3.

NEW QUESTION 100

- (Exam Topic 1)

A company wants to use AWS to create a business continuity solution in case the company's main on-premises application fails. The application runs on physical servers that also run other applications. The on-premises application that the company is planning to migrate uses a MySQL database as a data store. All the company's on-premises applications use operating systems that are compatible with Amazon EC2.

Which solution will achieve the company's goal with the LEAST operational overhead?

- A. Install the AWS Replication Agent on the source servers, including the MySQL server
- B. Set up replication for all server
- C. Launch test instances for regular drill
- D. Cut over to the test instances to fail over the workload in the case of a failure event.
- E. Install the AWS Replication Agent on the source servers, including the MySQL server
- F. Initialize AWS Elastic Disaster Recovery in the target AWS Regio
- G. Define the launch setting

- H. Frequently perform failover and fallback from the most recent point in time.
- I. Create AWS Database Migration Service (AWS DMS) replication servers and a target Amazon Aurora MySQL DB cluster to host the databases
- J. Create a DMS replication task to copy the existing data to the target DB cluster
- K. Create a local AWS Schema Conversion Tool (AWS SCT) change data capture (CDC) task to keep the data synchronized
- L. Install the rest of the software on EC2 instances by starting with a compatible base AMI.
- M. Deploy an AWS Storage Gateway Volume Gateway on-premise
- N. Mount volumes on all on-premises servers
- O. Install the application and the MySQL database on the new volume
- P. Take regular snapshots
- Q. Install all the software on EC2 instances by starting with a compatible base AMI
- R. Launch a Volume Gateway on an EC2 instance
- S. Restore the volumes from the latest snapshot
- T. Mount the new volumes on the EC2 instances in the case of a failure event.

Answer: B

Explanation:

<https://docs.aws.amazon.com/drs/latest/userguide/what-is-drs.html> <https://docs.aws.amazon.com/drs/latest/userguide/recovery-workflow-gs.html>

NEW QUESTION 105

- (Exam Topic 1)

A start-up company hosts a fleet of Amazon EC2 instances in private subnets using the latest Amazon Linux 2 AMI. The company's engineers rely heavily on SSH access to the instances for troubleshooting.

The company's existing architecture includes the following:

- A VPC with private and public subnets, and a NAT gateway
- Site-to-Site VPN for connectivity with the on-premises environment
- EC2 security groups with direct SSH access from the on-premises environment

The company needs to increase security controls around SSH access and provide auditing of commands executed by the engineers.

Which strategy should a solutions architect use?

- A. Install and configure EC2 Instance Connect on the fleet of EC2 instances
- B. Remove all security group rules attached to EC2 instances that allow inbound TCP on port 22. Advise the engineers to remotely access the instances by using the EC2 Instance Connect CLI.
- C. Update the EC2 security groups to only allow inbound TCP on port 22 to the IP addresses of the engineer's device
- D. Install the Amazon CloudWatch agent on all EC2 instances and send operating system audit logs to CloudWatch Logs.
- E. Update the EC2 security groups to only allow inbound TCP on port 22 to the IP addresses of the engineer's device
- F. Enable AWS Config for EC2 security group resource changes
- G. Enable AWS Firewall Manager and apply a security group policy that automatically remediates changes to rules.
- H. Create an IAM role with the AmazonSSMManagedInstanceCore managed policy attached
- I. Attach the IAM role to all the EC2 instances
- J. Remove all security group rules attached to the EC2 instances that allow inbound TCP on port 22. Have the engineers install the AWS Systems Manager Session Manager plugin for their devices and remotely access the instances by using the start-session API call from Systems Manager.

Answer: D

Explanation:

Allows client machines to be able to connect to Session Manager using the AWS CLI instead of going through the AWS EC2 or AWS Server Manager console.

<https://docs.aws.amazon.com/systems-manager/latest/userguide/session-manager-working-with-install-plugin.html> <https://docs.aws.amazon.com/systems-manager/latest/userguide/session-manager-working-with-install-plugin.html>

NEW QUESTION 109

- (Exam Topic 1)

A company wants to use a third-party software-as-a-service (SaaS) application. The third-party SaaS application is consumed through several API calls. The third-party SaaS application also runs on AWS inside a VPC.

The company will consume the third-party SaaS application from inside a VPC. The company has internal security policies that mandate the use of private connectivity that does not traverse the internet. No resources that run in the company VPC are allowed to be accessed from outside the company's VPC. All permissions must conform to the principles of least privilege.

Which solution meets these requirements?

- A. Create an AWS PrivateLink interface VPC endpoint
- B. Connect this endpoint to the endpoint service that the third-party SaaS application provides
- C. Create a security group to limit the access to the endpoint
- D. Associate the security group with the endpoint.
- E. Create an AWS Site-to-Site VPN connection between the third-party SaaS application and the company VPC
- F. Configure network ACLs to limit access across the VPN tunnels.
- G. Create a VPC peering connection between the third-party SaaS application and the company VPC. Update route tables by adding the needed routes for the peering connection.
- H. Create an AWS PrivateLink endpoint service
- I. Ask the third-party SaaS provider to create an interface VPC endpoint for this endpoint service
- J. Grant permissions for the endpoint service to the specific account of the third-party SaaS provider.

Answer: A

Explanation:

Reference architecture - <https://docs.aws.amazon.com/vpc/latest/privatelink/privatelink-access-saas.html> Note from documentation that Interface Endpoint is at client side

NEW QUESTION 114

- (Exam Topic 2)

A company provides auction services for artwork and has users across North America and Europe. The company hosts its application in Amazon EC2 instances in

the us-east-1 Region. Artists upload photos of their work as large-size, high-resolution image files from their mobile phones to a centralized Amazon S3 bucket created in the us-east-1 Region. The users in Europe are reporting slow performance for their Image uploads. How can a solutions architect improve the performance of the image upload process?

- A. Redeploy the application to use S3 multipart uploads.
- B. Create an Amazon CloudFront distribution and point to the application as a custom origin
- C. Configure the buckets to use S3 Transfer Acceleration.
- D. Create an Auto Scaling group for the EC2 instances and create a scaling policy.

Answer: C

Explanation:

Transfer acceleration. S3 Transfer Acceleration utilizes the Amazon CloudFront global network of edge locations to accelerate the transfer of data to and from S3 buckets. By enabling S3 Transfer Acceleration on the centralized S3 bucket, the users in Europe will experience faster uploads as their data will be routed through the closest CloudFront edge location.

NEW QUESTION 118

- (Exam Topic 2)

A company is running a compute workload by using Amazon EC2 Spot Instances that are in an Auto Scaling group. The launch template uses two placement groups and a single instance type.

Recently, a monitoring system reported Auto Scaling instance launch failures that correlated with longer wait times for system users. The company needs to improve the overall reliability of the workload.

Which solution will meet this requirement?

- A. Replace the launch template with a launch configuration to use an Auto Scaling group that uses attribute-based instance type selection.
- B. Create a new launch template version that uses attribute-based instance type selection
- C. Configure the Auto Scaling group to use the new launch template version.
- D. Update the launch template Auto Scaling group to increase the number of placement groups.
- E. Update the launch template to use a larger instance type.

Answer: B

Explanation:

<https://docs.aws.amazon.com/autoscaling/ec2/userguide/create-asg-instance-type-requirements.html#use-attribute-based-instance-type-selection>

NEW QUESTION 123

- (Exam Topic 2)

A company has five development teams that have each created five AWS accounts to develop and host applications. To track spending, the development teams log in to each account every month, record the current cost from the AWS Billing and Cost Management console, and provide the information to the company's finance team.

The company has strict compliance requirements and needs to ensure that resources are created only in AWS Regions in the United States. However, some resources have been created in other Regions.

A solutions architect needs to implement a solution that gives the finance team the ability to track and consolidate expenditures for all the accounts. The solution also must ensure that the company can create resources only in Regions in the United States.

Which combination of steps will meet these requirements in the MOST operationally efficient way? (Select THREE.)

- A. Create a new account to serve as a management account
- B. Create an Amazon S3 bucket for the finance team. Use AWS Cost and Usage Reports to create monthly reports and to store the data in the finance team's S3 bucket.
- C. Create a new account to serve as a management account
- D. Deploy an organization in AWS Organizations with all features enabled
- E. Invite all the existing accounts to the organization
- F. Ensure that each account accepts the invitation.
- G. Create an OU that includes all the development team
- H. Create an SCP that allows the creation of resources only in Regions that are in the United States
- I. Apply the SCP to the OU.
- J. Create an OU that includes all the development team
- K. Create an SCP that denies the creation of resources in Regions that are outside the United States
- L. Apply the SCP to the OU.
- M. Create an IAM role in the management account. Attach a policy that includes permissions to view the Billing and Cost Management console
- N. Allow the finance team users to assume the role
- O. Use AWS Cost Explorer and the Billing and Cost Management console to analyze cost.
- P. Create an IAM role in each AWS account
- Q. Attach a policy that includes permissions to view the Billing and Cost Management console
- R. Allow the finance team users to assume the role.

Answer: BCE

Explanation:

AWS Organizations is a service that enables you to consolidate multiple AWS accounts into an organization that you create and centrally manage. By creating a management account and inviting all the existing accounts to join the organization, the solutions architect can track and consolidate expenditures for all the accounts using AWS Cost Management tools such as AWS Cost Explorer and AWS Budgets. An organizational unit (OU) is a group of accounts within an organization that can be used to apply policies and simplify management. A service control policy (SCP) is a type of policy that you can use to manage permissions in your organization. By creating an OU that includes all the development teams and applying an SCP that allows the creation of resources only in Regions that are in the United States, the solutions architect can ensure that the company meets its compliance requirements and avoids unwanted charges from other Regions. An IAM role is an identity with permission policies that determine what the identity can and cannot do in AWS. By creating an IAM role in the management account and allowing the finance team users to assume it, the solutions architect can give them access to view the Billing and Cost Management console without sharing credentials or creating additional users. References:

➤ https://docs.aws.amazon.com/organizations/latest/userguide/orgs_introduction.html

➤ https://docs.aws.amazon.com/organizations/latest/userguide/orgs_manage_policies_scp.html

- https://docs.aws.amazon.com/IAM/latest/UserGuide/id_roles.html
- <https://docs.aws.amazon.com/aws-cost-management/latest/userguide/what-is-costmanagement.html>

NEW QUESTION 127

- (Exam Topic 2)

A company runs a processing engine in the AWS Cloud. The engine processes environmental data from logistics centers to calculate a sustainability index. The company has millions of devices in logistics centers that are spread across Europe. The devices send information to the processing engine through a RESTful API. The API experiences unpredictable bursts of traffic. The company must implement a solution to process all data that the devices send to the processing engine. Data loss is unacceptable.

Which solution will meet these requirements?

- A. Create an Application Load Balancer (ALB) for the RESTful API. Create an Amazon Simple Queue Service (Amazon SQS) queue. Create a listener and a target group for the ALB. Add the SQS queue as the target. Use a container that runs in Amazon Elastic Container Service (Amazon ECS) with the Fargate launch type to process messages in the queue.
- B. Create an Amazon API Gateway HTTP API that implements the RESTful API. Create an Amazon Simple Queue Service (Amazon SQS) queue. Create an API Gateway service integration with the SQS queue. Create an AWS Lambda function to process messages in the SQS queue.
- C. Create an Amazon API Gateway REST API that implements the RESTful API. Create a fleet of Amazon EC2 instances in an Auto Scaling group. Create an API Gateway Auto Scaling group proxy integration. Use the EC2 instances to process incoming data.
- D. Create an Amazon CloudFront distribution for the RESTful API. Create a data stream in Amazon Kinesis Data Streams. Set the data stream as the origin for the distribution. Create an AWS Lambda function to consume and process data in the data stream.

Answer: A

Explanation:

It will use the ALB to handle the unpredictable bursts of traffic and route it to the SQS queue. The SQS queue will act as a buffer to store incoming data temporarily, and the container running in Amazon ECS with the Fargate launch type will process messages in the queue. This approach will ensure that all data is processed and prevent data loss.

NEW QUESTION 132

- (Exam Topic 2)

A company wants to containerize a multi-tier web application and move the application from an on-premises data center to AWS. The application includes web, application, and database tiers. The company needs to make the application fault tolerant and scalable. Some frequently accessed data must always be available across application servers. Frontend web servers need session persistence and must scale to meet increases in traffic.

Which solution will meet these requirements with the LEAST ongoing operational overhead?

- A. Run the application on Amazon Elastic Container Service (Amazon ECS) on AWS Fargate.
- B. Use Amazon Elastic File System (Amazon EFS) for data that is frequently accessed between the web and application tier.
- C. Store the frontend web server session data in Amazon Simple Queue Service (Amazon SQS).
- D. Run the application on Amazon Elastic Container Service (Amazon ECS) on Amazon EC2. Use Amazon ElastiCache for Redis to cache frontend web server session data.
- E. Use Amazon Elastic Block Store (Amazon EBS) with Multi-Attach on EC2 instances that are distributed across multiple Availability Zones.
- F. Run the application on Amazon Elastic Kubernetes Service (Amazon EKS). Configure Amazon EKS to use managed node group.
- G. Use ReplicaSets to run the web servers and application.
- H. Create an Amazon Elastic File System (Amazon EFS) mount target.
- I. Mount the EFS file system across all EKS pods to store frontend web server session data.
- J. Deploy the application on Amazon Elastic Kubernetes Service (Amazon EKS). Configure Amazon EKS to use managed node group.
- K. Run the web servers and application as Kubernetes deployments in the EKS cluster.
- L. Store the frontend web server session data in an Amazon DynamoDB table.
- M. Create an Amazon Elastic File System (Amazon EFS) volume that all applications will mount at the time of deployment.

Answer: D

Explanation:

Deploying the application on Amazon EKS with managed node groups simplifies the operational overhead of managing the Kubernetes cluster. Running the web servers and application as Kubernetes deployments ensures that the desired number of pods are always running and can scale up or down as needed. Storing the frontend web server session data in an Amazon DynamoDB table provides a fast, scalable, and durable storage option that can be accessed across multiple Availability Zones. Creating an Amazon EFS volume that all applications will mount at the time of deployment allows the application to share data that is frequently accessed between the web and application tiers. References:

- <https://docs.aws.amazon.com/eks/latest/userguide/managed-node-groups.html>
- <https://docs.aws.amazon.com/eks/latest/userguide/deployments.html>
- <https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Introduction.html>
- <https://docs.aws.amazon.com/efs/latest/ug/mounting-fs.html>

NEW QUESTION 136

- (Exam Topic 2)

A company runs a customer service center that accepts calls and automatically sends all customers a managed, interactive, two-way experience survey by text message.

The applications that support the customer service center run on machines that the company hosts in an on-premises data center. The hardware that the company uses is old, and the company is experiencing downtime with the system. The company wants to migrate the system to AWS to improve reliability.

Which solution will meet these requirements with the LEAST ongoing operational overhead?

- A. Use Amazon Connect to replace the old call center hardware.
- B. Use Amazon Pinpoint to send text message surveys to customers.
- C. Use Amazon Connect to replace the old call center hardware.
- D. Use Amazon Simple Notification Service (Amazon SNS) to send text message surveys to customers.
- E. Migrate the call center software to Amazon EC2 instances that are in an Auto Scaling group.
- F. Use the EC2 instances to send text message surveys to customers.
- G. Use Amazon Pinpoint to replace the old call center hardware and to send text message surveys to customers.

Answer: A

Explanation:

Amazon Connect is a cloud-based contact center service that allows you to set up a virtual call center for your business. It provides an easy-to-use interface for managing customer interactions through voice and chat. Amazon Connect integrates with other AWS services, such as Amazon S3 and Amazon Kinesis, to help you collect, store, and analyze customer data for insights into customer behavior and trends. On the other hand, Amazon Pinpoint is a marketing automation and analytics service that allows you to engage with your customers across different channels, such as email, SMS, push notifications, and voice. It helps you create personalized campaigns based on user behavior and enables you to track user engagement and retention. While both services allow you to communicate with your customers, they serve different purposes. Amazon Connect is focused on customer support and service, while Amazon Pinpoint is focused on marketing and engagement.

NEW QUESTION 137

- (Exam Topic 2)

A company has a website that runs on Amazon EC2 instances behind an Application Load Balancer (ALB). The instances are in an Auto Scaling group. The ALB is associated with an AWS WAF web ACL.

The website often encounters attacks in the application layer. The attacks produce sudden and significant increases in traffic on the application server. The access logs show that each attack originates from different IP addresses. A solutions architect needs to implement a solution to mitigate these attacks.

Which solution will meet these requirements with the LEAST operational overhead?

- A. Create an Amazon CloudWatch alarm that monitors server access
- B. Set a threshold based on access by IP address
- C. Configure an alarm action that adds the IP address to the web ACL's deny list.
- D. Deploy AWS Shield Advanced in addition to AWS WAF
- E. Add the ALB as a protected resource.
- F. Create an Amazon CloudWatch alarm that monitors user IP addresses
- G. Set a threshold based on access by IP address
- H. Configure the alarm to invoke an AWS Lambda function to add a deny rule in the application server's subnet route table for any IP addresses that activate the alarm.
- I. Inspect access logs to find a pattern of IP addresses that launched the attack
- J. Use an Amazon Route 53 geolocation routing policy to deny traffic from the countries that host those IP addresses.

Answer: C

Explanation:

"The AWS WAF API supports security automation such as blacklisting IP addresses that exceed request limits, which can be useful for mitigating HTTP flood attacks." >

<https://aws.amazon.com/blogs/security/how-to-protect-dynamic-web-applications-against-ddos-attacks-by-using>

NEW QUESTION 138

- (Exam Topic 2)

A solutions architect must provide a secure way for a team of cloud engineers to use the AWS CLI to upload objects into an Amazon S3 bucket. Each cloud engineer has an IAM user. IAM access keys and a virtual multi-factor authentication (MFA) device. The IAM users for the cloud engineers are in a group that is named S3-access. The cloud engineers must use MFA to perform any actions in Amazon S3.

Which solution will meet these requirements?

- A. Attach a policy to the S3 bucket to prompt the IAM user for an MFA code when the IAM user performs actions on the S3 bucket. Use IAM access keys with the AWS CLI to call Amazon S3.
- B. Update the trust policy for the S3-access group to require principals to use MFA when principals assume the group. Use IAM access keys with the AWS CLI to call Amazon S3.
- C. Attach a policy to the S3-access group to deny all S3 actions unless MFA is present. Use IAM access keys with the AWS CLI to call Amazon S3.
- D. Attach a policy to the S3-access group to deny all S3 actions unless MFA is present. Request temporary credentials from AWS Security Token Service (AWS STS). Attach the temporary credentials in a profile that Amazon S3 will reference when the user performs actions in Amazon S3.

Answer: D

Explanation:

The company should attach a policy to the S3-access group to deny all S3 actions unless MFA is present. The company should request temporary credentials from AWS Security Token Service (AWS STS). The company should attach the temporary credentials in a profile that Amazon S3 will reference when the user performs actions in Amazon S3. This solution will meet the requirements because AWS STS is a service that enables you to request temporary, limited-privilege credentials for IAM users or for users that you authenticate (federated users). You can use MFA with AWS STS to provide an extra layer of security when requesting temporary credentials¹. You can use the `sts get-session-token` AWS CLI command to request temporary credentials that include an MFA token². You can then use these credentials with the AWS CLI to access Amazon S3 resources. To do this, you need to attach a policy to the IAM group that denies all S3 actions unless MFA is present³. You also need to create a profile in the AWS CLI configuration file that references the temporary credentials.

The other options are not correct because:

- Attaching a policy to the S3 bucket to prompt the IAM user for an MFA code when the IAM user performs actions on the S3 bucket would not work because policies attached to S3 buckets cannot enforce MFA authentication. Policies attached to S3 buckets are resource-based policies that define what actions can be performed on the bucket and by whom. They do not have any logic to prompt for an MFA code or verify it.
- Updating the trust policy for the S3-access group to require principals to use MFA when principals assume the group would not work because trust policies are used for roles, not groups. Trust policies are policies that define which principals can assume a role. They do not apply to groups, which are collections of IAM users that share permissions.
- Creating an Amazon Route 53 Resolver DNS Firewall domain list that contains the allowed domains and configuring a DNS Firewall rule group with rules to allow or block requests based on the domain list would not help with enforcing MFA authentication for Amazon S3 actions. Amazon Route 53 Resolver DNS Firewall is a feature that enables you to filter and regulate outbound DNS traffic for your VPC. You can create reusable collections of filtering rules in DNS Firewall rule groups and associate them with your VPCs. You can specify lists of domain names to allow or block, and you can customize the responses for the DNS queries that you block. This feature is useful for controlling access to sites and blocking DNS-level threats, but not for requiring MFA authentication.

References:

- https://docs.aws.amazon.com/IAM/latest/UserGuide/id_credentials_temp.html
- https://docs.aws.amazon.com/IAM/latest/UserGuide/id_credentials_mfa_enable_cliapi.html
- https://docs.aws.amazon.com/IAM/latest/UserGuide/id_credentials_mfa_sample-policies.html

- > <https://docs.aws.amazon.com/cli/latest/userguide/cli-configure-profiles.html>
- > <https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/resolver-dns-firewall.html>

NEW QUESTION 140

- (Exam Topic 2)

A company has built a high performance computing (HPC) cluster in AWS for a tightly coupled workload that generates a large number of shared files stored in Amazon EFS. The cluster was performing well when the number of Amazon EC2 instances in the cluster was 100. However, when the company increased the cluster size to 1,000 EC2 instances, overall performance was well below expectations.

Which collection of design choices should a solutions architect make to achieve the maximum performance from the HPC cluster? (Select THREE.)

- A. Ensure the HPC cluster is launched within a single Availability Zone.
- B. Launch the EC2 instances and attach elastic network interfaces in multiples of four.
- C. Select EC2 Instance types with an Elastic Fabric Adapter (EFA) enabled.
- D. Ensure the cluster is launched across multiple Availability Zones.
- E. Replace Amazon EFS with multiple Amazon EBS volumes in a RAID array.
- F. Replace Amazon EFS with Amazon FSx for Lustre.

Answer: ACF

Explanation:

* A. High performance computing (HPC) workload cluster should be in a single AZ.

* C. Elastic Fabric Adapter (EFA) is a network device that you can attach to your Amazon EC2 instances to accelerate High Performance Computing (HPC)

* F. Amazon FSx for Lustre - Use it for workloads where speed matters, such as machine learning, high performance computing (HPC), video processing, and financial modeling.

Cluster – packs instances close together inside an Availability Zone. This strategy enables workloads to achieve the low-latency network performance necessary for tightly-coupled node-to-node communication that is typical of HPC applications.

<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/placement-groups.html>

NEW QUESTION 145

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