

# Exam Questions SAP-C01

AWS Certified Solutions Architect- Professional

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#### NEW QUESTION 1

A company is currently running a production workload on AWS that is very I/O intensive. Its workload consists of a single tier with 10 c4.8xlarge instances, each with 2 TB gp2 volumes. The number of processing jobs has recently increased, and latency has increased as well. The team realizes that they are constrained on the IOPS. For the application to perform efficiently, they need to increase the IOPS by 3,000 for each of the instances. Which of the following designs will meet the performance goal MOST cost effectively?

- A. Change the type of Amazon EBS volume from gp2 to io1 and set provisioned IOPS to 9,000.
- B. Increase the size of the gp2 volumes in each instance to 3 TB.
- C. Create a new Amazon EFS file system and move all the data to this new file system
- D. Mount this file system to all 10 instances.
- E. Create a new Amazon S3 bucket and move all the data to this new bucket
- F. Allow each instance to access this S3 bucket and use it for storage.

**Answer: B**

#### NEW QUESTION 2

A company receives clickstream data files to Amazon S3 every five minutes. A Python script runs as a cron job once a day on an Amazon EC2 instance to process each file and load it into a database hosted on Amazon RDS. The cron job takes 15 to 30 minutes to process 24 hours of data. The data consumers ask for the data be available as soon as possible.

Which solution would accomplish the desired outcome?

- A. Increase the size of the instance to speed up processing and update the schedule to run once an hour.
- B. Convert the cron job to an AWS Lambda function and trigger this new function using a cron job on an EC2 instance.
- C. Convert the cron job to an AWS Lambda function and schedule it to run once an hour using Amazon CloudWatch events.
- D. Create an AWS Lambda function that runs when a file is delivered to Amazon S3 using S3 event notifications.

**Answer: D**

#### Explanation:

<https://docs.aws.amazon.com/lambda/latest/dg/with-s3.html>

#### NEW QUESTION 3

An organization has two Amazon EC2 instances:

- The first is running an ordering application and an inventory application.
- The second is running a queuing system.

During certain times of the year, several thousand orders are placed per second. Some orders were lost when the queuing system was down. Also, the organization's inventory application has the incorrect quantity of products because some orders were processed twice.

What should be done to ensure that the applications can handle the increasing number of orders?

- A. Put the ordering and inventory applications into their own AWS Lambda function
- B. Have the ordering application write the messages into an Amazon SQS FIFO queue.
- C. Put the ordering and inventory applications into their own Amazon ECS containers and create an Auto Scaling group for each application
- D. Then, deploy the message queuing server in multiple Availability Zones.
- E. Put the ordering and inventory applications into their own Amazon EC2 instances, and create an Auto Scaling group for each application
- F. Use Amazon SQS standard queues for the incoming orders, and implement idempotency in the inventory application.
- G. Put the ordering and inventory applications into their own Amazon EC2 instance
- H. Write the incoming orders to an Amazon Kinesis data stream. Configure AWS Lambda to poll the stream and update the inventory application.

**Answer: C**

#### Explanation:

<https://docs.aws.amazon.com/AWSSimpleQueueService/latest/SQSDeveloperGuide/standard-queues.html>

#### NEW QUESTION 4

A company has an Amazon EC2 deployment that has the following architecture:

- An application tier that contains 8 m4.xlarge instances
- A Classic Load Balancer
- Amazon S3 as a persistent data store

After one of the EC2 instances fails, users report very slow processing of their requests. A Solutions Architect must recommend design changes to maximize system reliability. The solution must minimize costs.

What should the Solution Architect recommend?

- A. Migrate the existing EC2 instances to a serverless deployment using AWS Lambda functions
- B. Change the Classic Load Balancer to an Application Load Balancer
- C. Replace the application tier with m4.large instances in an Auto Scaling group
- D. Replace the application tier with 4 m4.2xlarge instances

**Answer: B**

#### Explanation:

By default, connection draining is enabled for Application Load Balancers but must be enabled for Classic Load Balancers. When Connection Draining is enabled and configured, the process of deregistering an instance from an Elastic Load Balancer gains an additional step. For the duration of the configured timeout, the load balancer will allow existing, in-flight requests made to an instance to complete, but it will not send any new requests to the instance. During this time, the API will report the status of the instance as InService, along with a message stating that "Instance deregistration currently in progress." Once the timeout is reached, any remaining connections will be forcibly closed. <https://docs.aws.amazon.com/autoscaling/ec2/userguide/attach-load-balancer-asg.html>

<https://aws.amazon.com/blogs/aws/elb-connection-draining-remove-instances-from-service-with-care/>

#### NEW QUESTION 5

A company wants to follow its website on AWS using serverless architecture design patterns for global customers. The company has outlined its requirements as follow:

- The website should be responsive.
- The website should offer minimal latency.
- The website should be highly available.
- Users should be able to authenticate through social identity providers such as Google, Facebook, and Amazon.
- There should be baseline DDoS protections for spikes in traffic.

How can the design requirements be met?

- A. Use Amazon CloudFront with Amazon ECS for hosting the websit
- B. Use AWS Secrets Manager for provide user management and authentication function
- C. Use ECS Docker containers to build an API.
- D. Use Amazon Route 53 latency routing with an Application Load Balancer and AWS Fargate in different regions for hosting the websit
- E. use Amazon Cognito to provide user management and authentication function
- F. Use Amazon EKS containers.
- G. Use Amazon CloudFront with Amazon S3 for hosting static web resource
- H. Use Amazon Cognito to provide user management authentication function
- I. Use Amazon API Gateway with AWS Lambda to build an API.
- J. Use AWS Direct Connect with Amazon CloudFront and Amazon S3 for hosting static web resource. Use Amazon Cognito to provide user management authentication function
- K. Use AWS Lambda to build an API.

**Answer:** C

#### NEW QUESTION 6

A company has a standard three-tier architecture using two Availability Zones. During the company's off season, users report that the website is not working. The Solutions Architect finds that no changes have been made to the environment recently, the website is reachable, and it is possible to log in. However, when the Solutions Architect selects the "find a store near you" function, the maps provided on the site by a third-party RESTful API call do not work about 50% of the time after refreshing the page. The outbound API calls are made through Amazon EC2 NAT instances.

What is the MOST likely reason for this failure and how can it be mitigated in the future?

- A. The network ACL for one subnet is blocking outbound web traffi
- B. Open the network ACL and prevent administration from making future changes through IAM.
- C. The fault is in the third-party environmen
- D. Contact the third party that provides the maps and request a fix that will provide better uptime.
- E. One NAT instance has become overloade
- F. Replace both EC2 NAT instances with a larger-sized instance and make sure to account for growth when making the new instance size.
- G. One of the NAT instances faile
- H. Recommend replacing the EC2 NAT instances with a NAT gateway.

**Answer:** D

#### Explanation:

The issue is 50% failure, means the balancing over 2 AZs is failing on one NAT instance in one AZ. The solution is to replace the NAT instance with fully managed and high available NAT gateway.

#### NEW QUESTION 7

A company currently uses Amazon EBS and Amazon RDS for storage purposes. The company intends to use a pilot light approach for disaster recovery in a different AWS Region. The company has an RTO of 6 hours and an RPO of 24 hours.

Which solution would achieve the requirements with MINIMAL cost?

- A. Use AWS Lambda to create daily EBS and RDS snapshots, and copy them to the disaster recovery regio
- B. Use Amazon Route 53 with active-passive failover configuratio
- C. Use Amazon EC2 in an Auto Scaling group with the capacity set to 0 in the disaster recovery region.
- D. Use AWS Lambda to create daily EBS and RDS snapshots, and copy them to the disaster recovery regio
- E. Use Amazon Route 53 with active-active failover configuratio
- F. Use Amazon EC2 in an AutoScaling group configured in the same way as in the primary region.
- G. Use Amazon ECS to handle long-running tasks to create daily EBS and RDS snapshots, and copy to the disaster recovery regio
- H. Use Amazon Route 53 with active-passive failover configuratio
- I. Use Amazon EC2 in an Auto Scaling group with the capacity set to 0 in the disaster recovery region.
- J. Use EBS and RDS cross-region snapshot copy capability to create snapshots in the disaster recovery regio
- K. Use Amazon Route 53 with active-active failover configuratio
- L. Use Amazon EC2 in an Auto Scaling group with the capacity set to 0 in the disaster recovery region.

**Answer:** A

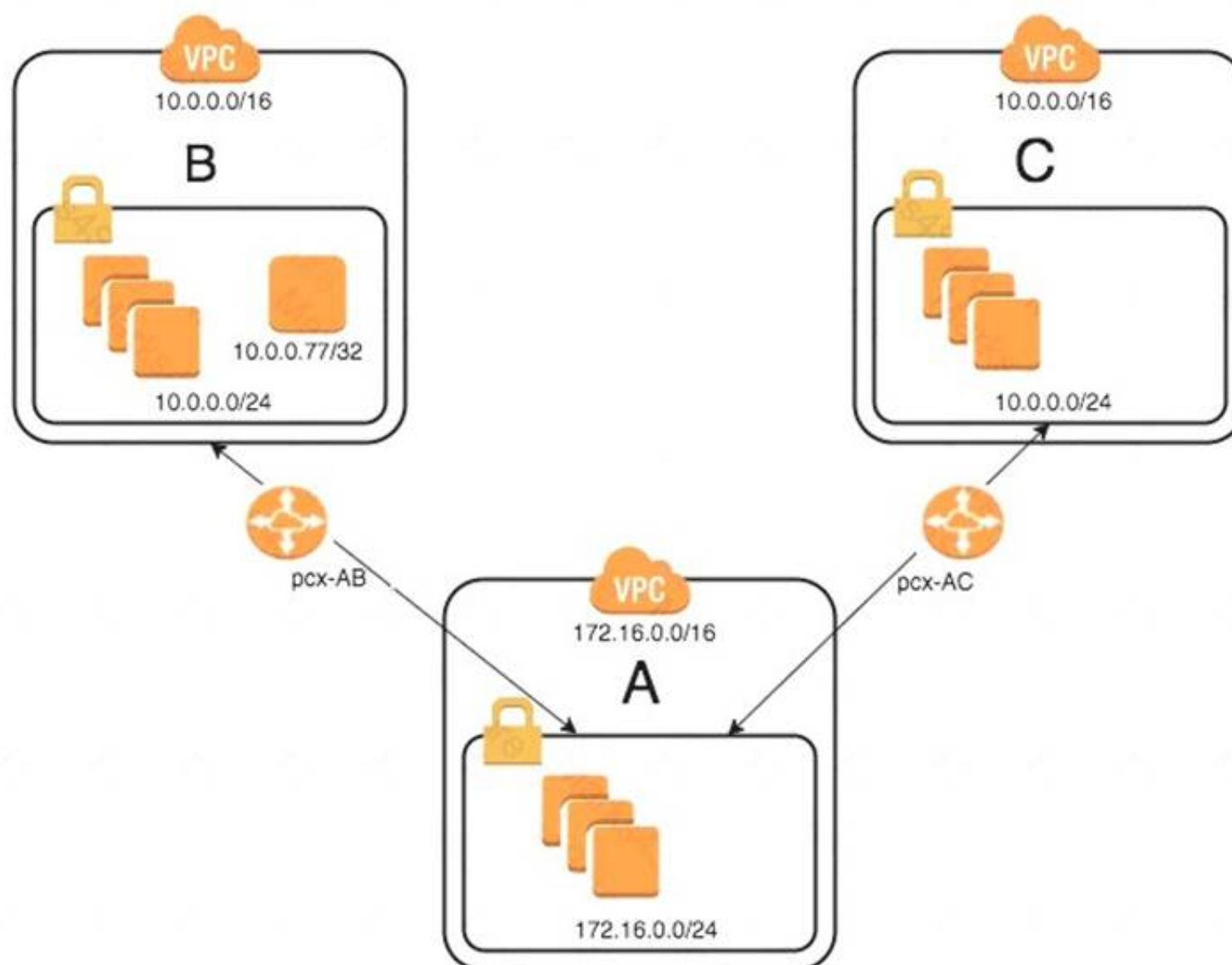
#### Explanation:

[https://docs.aws.amazon.com/AmazonECS/latest/developerguide/scheduling\\_tasks.html](https://docs.aws.amazon.com/AmazonECS/latest/developerguide/scheduling_tasks.html)

#### NEW QUESTION 8

An organization has recently grown through acquisitions. Two of the purchased companies use the same IP CIDR range. There is a new short-term requirement to allow AnyCompany A (VPC-A) to communicate with a server that has the IP address 10.0.0.77 in AnyCompany B (VPC-B). AnyCompany A must also communicate with all resources in AnyCompany C (VPC-C). The Network team has created the VPC peer links, but it is having issues with communications

between VPC-A and VPC-B. After an investigation, the team believes that the routing tables in the VPCs are incorrect.



What configuration will allow AnyCompany A to communicate with AnyCompany C in addition to the database in AnyCompany B?

- A. On VPC-A, create a static route for the VPC-B CIDR range (10.0.0.0/24) across VPC peer pcx-AB. Create a static route of 10.0.0.0/16 across VPC peer pcx-AC. On VPC-B, create a static route for VPC-A CIDR (172.16.0.0/24) on peer pcx-AB. On VPC-C, create a static route for VPC-A CIDR (172.16.0.0/24) across peer pcx-AC.
- B. On VPC-A, enable dynamic route propagation on pcx-AB and pcx-AC. On VPC-B, enable dynamic route propagation and use security groups to allow only the IP address 10.0.0.77/32 on VPC peer pcx-AB. On VPC-C, enable dynamic route propagation with VPC-A on peer pcx-AC.
- C. On VPC-A, create network access control lists that block the IP address 10.0.0.77/32 on VPC peer pcx-AC. On VPC-A, create a static route for VPC-B CIDR (10.0.0.0/24) on pcx-AB and a static route for VPC-C CIDR (10.0.0.0/24) on pcx-AC. On VPC-B, create a static route for VPC-A CIDR (172.16.0.0/24) across peer pcx-AB. On VPC-C, create a static route for VPC-A CIDR (172.16.0.0/24) across peer pcx-AC.
- D. On VPC-A, create a static route for the VPC-B CIDR (10.0.0.77/32) database across VPC peer pcx-AB. Create a static route for the VPC-C CIDR on VPC peer pcx-AC. On VPC-B, create a static route for VPC-A CIDR (172.16.0.0/24) on peer pcx-AB. On VPC-C, create a static route for VPC-A CIDR (172.16.0.0/24) across peer pcx-AC.

Answer: D

#### NEW QUESTION 9

A company had a tight deadline to migrate its on-premises environment to AWS. It moved over Microsoft SQL Servers and Microsoft Windows Servers using the virtual machine import/export service and rebuild other applications native to the cloud. The team created both Amazon EC2 databases and used Amazon RDS. Each team in the company was responsible for migrating their applications, and they have created individual accounts for isolation of resources. The company did not have much time to consider costs, but now it would like suggestions on reducing its AWS spend. Which steps should a Solutions Architect take to reduce costs?

- A. Enable AWS Business Support and review AWS Trusted Advisor's cost check
- B. Create Amazon EC2 Auto Scaling groups for applications that experience fluctuating demand
- C. Save AWS Simple Monthly Calculator reports in Amazon S3 for trend analysis
- D. Create a master account under Organizations and have teams join for consolidating billing.
- E. Enable Cost Explorer and AWS Business Support Reserve Amazon EC2 and Amazon RDS DB instance
- F. Use Amazon CloudWatch and AWS Trusted Advisor for monitoring and to receive cost-savings suggestion
- G. Create a master account under Organizations and have teams join for consolidated billing.
- H. Create an AWS Lambda function that changes the instance size based on Amazon CloudWatch alarms. Reserve instances based on AWS Simple Monthly Calculator suggestion
- I. Have an AWS Well-Architected framework review and apply recommendation
- J. Create a master account under Organizations and have teams join for consolidated billing.
- K. Create a budget and monitor for costs exceeding the budget
- L. Create Amazon EC2 Auto Scaling groups for applications that experience fluctuating demand
- M. Create an AWS Lambda function that changes instance sizes based on Amazon CloudWatch alarm
- N. Have each team upload their bill to an Amazon S3 bucket for analysis of team spending
- O. Use Spot instances on nightly batch processing jobs.

Answer: D

#### NEW QUESTION 10

A company has a serverless application comprised of Amazon CloudFront, Amazon API Gateway, and AWS Lambda functions. The current deployment process of the application code is to create a new version number of the Lambda function and run an AWS CLI script to update. If the new function version has errors,



another CLI script reverts by deploying the previous working version of the function. The company would like to decrease the time to deploy new versions of the application logic provided by the Lambda functions, and also reduce the time to detect and revert when errors are identified. How can this be accomplished?

- A. Create and deploy nested AWS CloudFormation stacks with the parent stack consisting of the AWS CloudFront distribution and API Gateway, and the child stack containing the Lambda function
- B. For changes to Lambda, create an AWS CloudFormation change set and deploy; if errors are triggered, revert the AWS CloudFormation change set to the previous version.
- C. Use AWS SAM and built-in AWS CodeDeploy to deploy the new Lambda version, gradually shift traffic to the new version, and use pre-traffic and post-traffic test functions to verify code
- D. Rollback if Amazon CloudWatch alarms are triggered.
- E. Refactor the AWS CLI scripts into a single script that deploys the new Lambda version
- F. When deployment is completed, the script tests execution
- G. If errors are detected, revert to the previous Lambda version.
- H. Create and deploy an AWS CloudFormation stack that consists of a new API Gateway endpoint that references the new Lambda version
- I. Change the CloudFront origin to the new API Gateway endpoint, monitor errors and if detected, change the AWS CloudFront origin to the previous API Gateway endpoint.

**Answer:** B

**Explanation:**

<https://aws.amazon.com/about-aws/whats-new/2017/11/aws-lambda-supports-traffic-shifting-and-phased-deploy> <https://docs.aws.amazon.com/serverless-application-model/latest/developerguide/automating-updates-to-serverless>

**NEW QUESTION 10**

A company runs an application on a fleet of Amazon EC2 instances. The application requires low latency and random access to 100 GB of data. The application must be able to access the data at up to 3,000 IOPS. A Development team has configured the EC2 launch template to provision a 100-GB Provisioned IOPS (PIOPS) Amazon EBS volume with 3,000 IOPS provisioned. A Solutions Architect is tasked with lowering costs without impacting performance and durability. Which action should be taken?

- A. Create an Amazon EFS file system with the performance mode set to Max I/O. Configure the EC2 operating system to mount the EFS file system.
- B. Create an Amazon EFS file system with the throughput mode set to Provisioned. Configure the EC2 operating system to mount the EFS file system.
- C. Update the EC2 launch template to allocate a new 1-TB EBS General Purpose SSD (gp2) volume.
- D. Update the EC2 launch template to exclude the PIOPS volume. Configure the application to use local instance storage.

**Answer:** A

**NEW QUESTION 12**

As a part of building large applications in the AWS Cloud, the Solutions Architect is required to implement the perimeter security protection. Applications running on AWS have the following endpoints:

- Application Load Balancer
- Amazon API Gateway regional endpoint
- Elastic IP address-based EC2 instances.
- Amazon S3 hosted websites.
- Classic Load Balancer

The Solutions Architect must design a solution to protect all of the listed web front ends and provide the following security capabilities:

- DDoS protection
- SQL injection protection
- IP address whitelist/blacklist
- HTTP flood protection
- Bad bot scraper protection

How should the Solutions Architect design the solution?

- A. Deploy AWS WAF and AWS Shield Advanced on all web endpoints.
- B. Add AWS WAF rules to enforce the company's requirements.
- C. Deploy Amazon CloudFront in front of all the endpoints.
- D. The CloudFront distribution provides perimeter protection.
- E. Add AWS Lambda-based automation to provide additional security.
- F. Deploy Amazon CloudFront in front of all the endpoints.
- G. Deploy AWS WAF and AWS Shield Advanced.
- H. Add AWS WAF rules to enforce the company's requirements.
- I. Use AWS Lambda to automate and enhance the security posture.
- J. Secure the endpoints by using network ACLs and security groups and adding rules to enforce the company's requirements.
- K. Use AWS Lambda to automatically update the rules.

**Answer:** C

**NEW QUESTION 17**

A company CFO recently analyzed the company's AWS monthly bill and identified an opportunity to reduce the cost for AWS Elastic Beanstalk environments in use. The CFO has asked a Solutions Architect to design a highly available solution that will spin up an Elastic Beanstalk environment in the morning and terminate it at the end of the day.

The solution should be designed with minimal operational overhead and to minimize costs. It should also be able to handle the increased use of Elastic Beanstalk environments among different teams, and must provide a one-stop scheduler solution for all teams to keep the operational costs low.

What design will meet these requirements?

- A. Set up a Linux EC2 Micro instance
- B. Configure an IAM role to allow the start and stop of the Elastic Beanstalk environment and attach it to the instance
- C. Create scripts on the instance to start and stop the Elastic Beanstalk environment
- D. Configure cron jobs on the instance to execute the scripts.
- E. Develop AWS Lambda functions to start and stop the Elastic Beanstalk environment
- F. Configure a Lambda execution role granting Elastic Beanstalk environment start/stop permissions, and assign the role to the Lambda function
- G. Configure cron expression Amazon CloudWatch Events rules to trigger the Lambda functions.
- H. Develop an AWS Step Functions state machine with "wait" as its type to control the start and stop time. Use the activity task to start and stop the Elastic Beanstalk environment
- I. Create a role for Step Functions to allow it to start and stop the Elastic Beanstalk environment
- J. Invoke Step Functions daily.
- K. Configure a time-based Auto Scaling group
- L. In the morning, have the Auto Scaling group scale up an Amazon EC2 instance and put the Elastic Beanstalk environment start command in the EC2 instance user data
- M. At the end of the day, scale down the instance number to 0 to terminate the EC2 instance.

**Answer:** B

**Explanation:**

<https://aws.amazon.com/premiumsupport/knowledge-center/schedule-elastic-beanstalk-stop-restart/>

**NEW QUESTION 18**

During an audit a Security team discovered that a Development team was putting IAM user secret access keys in their code and then committing it to an AWS CodeCommit repository. The Security team wants to automatically find and remediate instances of this security vulnerability. Which solution will ensure that the credentials are appropriately secured automatically?

- A. Run a script nightly using AWS Systems Manager Run Command to search for credentials on the development instances. If found, use AWS Secrets Manager to rotate the credentials.
- B. Use a scheduled AWS Lambda function to download and scan the application code from CodeCommit. If credentials are found, generate new credentials and store them in AWS KMS.
- C. Configure Amazon Macie to scan for credentials in CodeCommit repositories. If credentials are found, trigger an AWS Lambda function to disable the credentials and notify the user.
- D. Configure a CodeCommit trigger to invoke an AWS Lambda function to scan new code submissions for credentials. If credentials are found, disable them in AWS IAM and notify the user.

**Answer:** C

**NEW QUESTION 20**

A company has developed a new billing application that will be released in two weeks. Developers are testing the application running on 10 EC2 instances managed by an Auto Scaling group in subnet 172.31.0.0/24 within VPC A with CIDR block 172.31.0.0/16. The Developers noticed connection timeout errors in the application logs while connecting to an Oracle database running on an Amazon EC2 instance in the same region within VPC B with CIDR block 172.50.0.0/16. The IP of the database instance is hard-coded in the application instances. Which recommendations should a Solutions Architect present to the Developers to solve the problem in a secure way with minimal maintenance and overhead?

- A. Disable the SrcDestCheck attribute for all instances running the application and Oracle Database. Change the default route of VPC A to point ENI of the Oracle Database that has an IP address assigned within the range of 172.50.0.0/26.
- B. Create and attach internet gateways for both VPCs.
- C. Configure default routes to the Internet gateways for both VPCs.
- D. Assign an Elastic IP for each Amazon EC2 instance in VPC A.
- E. Create a VPC peering connection between the two VPCs and add a route to the routing table of VPC A that points to the IP address range of 172.50.0.0/16.
- F. Create an additional Amazon EC2 instance for each VPC as a customer gateway; create one virtual private gateway (VGW) for each VPC, configure an end-to-end VPC, and advertise the routes for 172.50.0.0/16.

**Answer:** C

**NEW QUESTION 22**

A development team has created a series of AWS CloudFormation templates to help deploy services. They created a template for a network/virtual private (VPC) stack, a database stack, a bastion host stack, and a web application-specific stack. Each service requires the deployment of at least one template. Each template has multiple input parameters that make it difficult to deploy the services individually from the AWS CloudFormation console. The input parameters from one stack are typically outputs from other stacks. For example, the VPC ID, subnet IDs, and security groups from the network stack may need to be used in the application stack or database stack.

Which actions will help reduce the operational burden and the number of parameters passed into a service deployment? (Choose two.)

- A. Create a new AWS CloudFormation template for each service.
- B. After the existing templates, use cross-stack references to eliminate passing many parameters to each template.
- C. Call each required stack for the application as a nested stack from the new stack.
- D. Call the newly created service stack from the AWS CloudFormation console to deploy the specific service with a subset of the parameters previously required.
- E. Create a new portfolio in AWS Service Catalog for each service.
- F. Create a product for each existing AWS CloudFormation template required to build the service.
- G. Add the products to the portfolio that represents that service in AWS Service Catalog.
- H. To deploy the service, select the specific service portfolio and launch the portfolio with the necessary parameters to deploy all templates.
- I. Set up an AWS CodePipeline workflow for each service.
- J. For each existing template, choose AWS CloudFormation as a deployment action.
- K. Add the AWS CloudFormation template to the deployment action.
- L. Ensure that the deployment actions are processed to make sure that dependencies are obeyed.
- M. Use configuration files and scripts to share parameters between the stacks.
- N. To launch the service, execute the specific template by choosing the name of the service and releasing a change.
- O. Use AWS Step Functions to define a new service.
- P. Create a new AWS CloudFormation template for each service.
- Q. After the existing templates, use cross-stack references to eliminate passing many parameters to each template.

- R. Call each required stack for the application as a nested stack from the new service template
- S. Configure AWS Step Functions to call the service template directly
- T. In the AWS Step Functions console, execute the step.
- . Create a new portfolio for the Services in AWS Service Catalog
- . Create a new AWS CloudFormation template for each service
- . After the existing templates to use cross-stack references to eliminate passing many parameters to each template
- . Call each required stack for the application as a nested stack from the new stack
- . Create a product for each application
- . Add the service template to the product
- . Add each new product to the portfolio
- . Deploy the product from the portfolio to deploy the service with the necessary parameters only to start the deployment.

**Answer:** AE

#### NEW QUESTION 23

A Solutions Architect wants to make sure that only AWS users or roles with suitable permissions can access a new Amazon API Gateway endpoint. The Solutions Architect wants an end-to-end view of each request to analyze the latency of the request and create service maps. How can the Solutions Architect design the API Gateway access control and perform request inspections?

- A. For the API Gateway method, set the authorization to AWS\_IAM. Then, give the IAM user or role execute-api:Invoke permission on the REST API resource. Enable the API caller to sign requests with AWS Signature when accessing the endpoint. Use AWS X-Ray to trace and analyze user requests to API Gateway.
- B. For the API Gateway resource, set CORS to enabled and only return the company's domain. mAccess-Control-Allow-Origin headers. Then give the IAM user or role execute-api:Invoke permission on the REST API resource. Use Amazon CloudWatch to trace and analyze user requests to API Gateway.
- C. Create an AWS Lambda function as the custom authorizer. Ask the API client to pass the key and secret when making the call and then use Lambda to validate the key/secret pair against the IAM system. Use AWS X-Ray to trace and analyze user requests to API Gateway.
- D. Create a client certificate for API Gateway. Distribute the certificate to the AWS users and roles that need to access the endpoint. Enable the API caller to pass the client certificate when accessing the endpoint. Use Amazon CloudWatch to trace and analyze user requests to API Gateway.

**Answer:** D

#### NEW QUESTION 26

A company is implementing a multi-account strategy; however, the Management team has expressed concerns that services like DNS may become overly complex. The company needs a solution that allows private DNS to be shared among virtual private clouds (VPCs) in different accounts. The company will have approximately 50 accounts in total.

What solution would create the LEAST complex DNS architecture and ensure that each VPC can resolve all AWS resources?

- A. Create a shared services VPC in a central account, and create a VPC peering connection from the shared services VPC to each of the VPCs in the other account.
- B. Within Amazon Route 53, create a privately hosted zone in the shared services VPC and resource record sets for the domain and subdomains. Programmatically associate other VPCs with the hosted zone.
- C. Create a VPC peering connection among the VPCs in all accounts.
- D. Set the VPC attributes enableDnsHostnames and enableDnsSupport to "true" for each VPC.
- E. Create an Amazon Route 53 private zone for each VPC.
- F. Create resource record sets for the domain and subdomain.
- G. Programmatically associate the hosted zones in each VPC with the other VPCs.
- H. Create a shared services VPC in a central account.
- I. Create a VPC peering connection from the VPCs in other accounts to the shared services VPC.
- J. Create an Amazon Route 53 privately hosted zone in the shared services VPC with resource record sets for the domain and subdomain.
- K. Allow UDP and TCP port 53 over the VPC peering connections.
- L. Set the VPC attributes enableDnsHostnames and enableDnsSupport to "false" in every VPC.
- M. Create an AWS Direct Connect connection with a private virtual interface.
- N. Allow UDP and TCP port 53 over the virtual interface.
- O. Use the on-premises DNS servers to resolve the IP addresses in each VPC on AWS.

**Answer:** A

#### Explanation:

<https://aws.amazon.com/blogs/networking-and-content-delivery/centralized-dns-management-of-hybrid-cloud-w>

#### NEW QUESTION 29

A company is migrating an application to AWS. It wants to use fully managed services as much as possible during the migration. The company needs to store large, important documents within the application with the following requirements:

- The data must be highly durable and available.
- The data must always be encrypted at rest and in transit.
- The encryption key must be managed by the company and rotated periodically. Which of the following solutions should the Solutions Architect recommend?

- A. Deploy the storage gateway to AWS in file gateway mode.
- B. Use Amazon EBS volume encryption using an AWS KMS key to encrypt the storage gateway volumes.
- C. Use Amazon S3 with a bucket policy to enforce HTTPS for connections to the bucket and to enforce server-side encryption and AWS KMS for object encryption.
- D. Use Amazon DynamoDB with SSL to connect to DynamoDB.
- E. Use an AWS KMS key to encrypt DynamoDB objects at rest.
- F. Deploy instances with Amazon EBS volumes attached to store this data.
- G. Use EBS volume encryption using an AWS KMS key to encrypt the data.

**Answer:** B

#### Explanation:



<https://aws.amazon.com/blogs/security/how-to-use-bucket-policies-and-apply-defense-in-depth-to-help-secure-y>

### NEW QUESTION 33

A company is using AWS for production and development workloads. Each business unit has its own AWS account for production, and a separate AWS account to develop and deploy its applications. The Information Security department has introduced new security policies that limit access for terminating certain Amazon ECs instances in all accounts to a small group of individuals from the Security team.

How can the Solutions Architect meet these requirements?

- A. Create a new IAM policy that allows access to those EC2 instances only for the Security tea
- B. Apply this policy to the AWS Organizations master account.
- C. Create a new tag-based IAM policy that allows access to these EC2 instances only for the Security team. Tag the instances appropriately, and apply this policy in each account.
- D. Create an organizational unit under AWS Organization
- E. Move all the accounts into this organizational unit and use SCP to apply a whitelist policy to allow access to these EC2 instances for the Security team only.
- F. Set up SAML federation for all accounts in AW
- G. Configure SAML so that it checks for the service API call before authenticating the use
- H. Block SAML from authenticating API calls if anyone other than the Security team accesses these instances.

**Answer: B**

### NEW QUESTION 37

A company runs a dynamic mission-critical web application that has an SLA of 99.99%. Global application users access the application 24/7. The application is currently hosted on premises and routinely fails to meet its SLA, especially when millions of users access the application concurrently. Remote users complain of latency.

How should this application be redesigned to be scalable and allow for automatic failover at the lowest cost?

- A. Use Amazon Route 53 failover routing with geolocation-based routin
- B. Host the website on automatically scaled Amazon EC2 instances behind an Application Load Balancer with an additional Application Load Balancer and EC2 instances for the application layer in each regio
- C. Use a Multi-AZ deployment with MySQL as the data layer.
- D. Use Amazon Route 53 round robin routing to distribute the load evenly to several regions with health check
- E. Host the website on automatically scaled Amazon ECS with AWS Fargate technology containers behind a Network Load Balancer, with an additional Network Load Balancer and Fargate containers for the application layer in each regio
- F. Use Amazon Aurora replicas for the data layer.
- G. Use Amazon Route 53 latency-based routing to route to the nearest region with health check
- H. Host the website in Amazon S3 in each region and use Amazon API Gateway with AWS Lambda for the application laye
- I. Use Amazon DynamoDB global tables as the data layer with Amazon DynamoDB Accelerator (DAX) for caching.
- J. Use Amazon Route 53 geolocation-based routin
- K. Host the website on automatically scaled AWS Fargate containers behind a Network Load Balancer with an additional Network Load Balancer and Fargate containers for the application layer in each regio
- L. Use Amazon Aurora Multi-Master for Aurora MySQL as the data layer.

**Answer: C**

### Explanation:

<https://aws.amazon.com/getting-started/projects/build-serverless-web-app-lambda-apigateway-s3-dynamodb-co>

### NEW QUESTION 38

A Solutions Architect is redesigning an image-viewing and messaging platform to be delivered as SaaS. Currently, there is a farm of virtual desktop infrastructure (VDI) that runs a desktop image-viewing application and a desktop messaging application. Both applications use a shared database to manage user accounts and sharing. Users log in from a web portal that launches the applications and streams the view of the application on the user's machine. The Development Operations team wants to move away from using VDI and wants to rewrite the application.

What is the MOST cost-effective architecture that offers both security and ease of management?

- A. Run a website from an Amazon S3 bucket with a separate S3 bucket for images and messaging data. Call AWS Lambda functions from embedded JavaScript to manage the dynamic content, and use Amazon Cognito for user and sharing management.
- B. Run a website from Amazon EC2 Linux servers, storing the images in Amazon S3, and use Amazon Cognito for user accounts and sharin
- C. Create AWS CloudFormation templates to launch the application by using EC2 user data to install and configure the application.
- D. Run a website as an AWS Elastic Beanstalk application, storing the images in Amazon S3, and using an Amazon RDS database for user accounts and sharin
- E. Create AWS CloudFormation templates to launch the application and perform blue/green deployments.
- F. Run a website from an Amazon S3 bucket that authorizes Amazon AppStream to stream applications for a combined image viewer and messenger that stores images in Amazon S3. Have the website use an Amazon RDS database for user accounts and sharing.

**Answer: D**

### Explanation:

<https://docs.aws.amazon.com/appstream2/latest/developerguide/managing-images.html>

### NEW QUESTION 42

A company used Amazon EC2 instances to deploy a web fleet to host a blog site. The EC2 instances are behind an Application Load Balancer (ALB) and are configured in an Auto Scaling group. The web application stores all blog content on an Amazon EFS volume.

The company recently added a feature for bloggers to add video to their posts, attracting 10 times the previous user traffic. At peak times of day, users report buffering and timeout issues while attempting to reach the site or watch videos.

Which is the MOST cost-efficient and scalable deployment that will resolve the issues for users?

- A. Reconfigure Amazon EFS to enable maximum I/O.
- B. Update the blog site to use instance store volumes for storag
- C. Copy the site contents to the volumes at launch and to Amazon S3 at shutdown.
- D. Configure an Amazon CloudFront distributio



- E. Point the distribution to an S3 bucket, and migrate the videos from EFS to Amazon S3.
- F. Set up an Amazon CloudFront distribution for all suite contents, and point the distribution at the ALB.

**Answer:** C

**Explanation:**

<https://aws.amazon.com/premiumsupport/knowledge-center/cloudfront-https-connection-fails/>

#### NEW QUESTION 43

A Solutions Architect must update an application environment within AWS Elastic Beanstalk using a blue/green deployment methodology. The Solutions Architect creates an environment that is identical to the existing application environment and deploys the application to the new environment.

What should be done next to complete the update?

- A. Redirect to the new environment using Amazon Route 53
- B. Select the Swap Environment URLs option
- C. Replace the Auto Scaling launch configuration
- D. Update the DNS records to point to the green environment

**Answer:** B

**Explanation:**

<https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features.CNAMESwap.html>

#### NEW QUESTION 47

A Solutions Architect has created an AWS CloudFormation template for a three-tier application that contains an Auto Scaling group of Amazon EC2 instances running a custom AMI.

The Solutions Architect wants to ensure that future updates to the custom AMI can be deployed to a running stack by first updating the template to refer to the new AMI, and then invoking UpdateStack to replace the EC2 instances with instances launched from the new AMI.

How can updates to the AMI be deployed to meet these requirements?

- A. Create a change set for a new version of the template, view the changes to the running EC2 instances to ensure that the AMI is correctly updated, and then execute the change set.
- B. Edit the AWS::AutoScaling::LaunchConfiguration resource in the template, changing its DeletionPolicy to Replace.
- C. Edit the AWS::AutoScaling::AutoScalingGroup resource in the template, inserting an UpdatePolicy attribute.
- D. Create a new stack from the updated template
- E. Once it is successfully deployed, modify the DNS records to point to the new stack and delete the old stack.

**Answer:** C

**Explanation:**

References:

<https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-properties-as-launchconfig.html>

#### NEW QUESTION 52

What combination of steps could a Solutions Architect take to protect a web workload running on Amazon EC2 from DDoS and application layer attacks? (Select two.)

- A. Put the EC2 instances behind a Network Load Balancer and configure AWS WAF on it.
- B. Migrate the DNS to Amazon Route 53 and use AWS Shield
- C. Put the EC2 instances in an Auto Scaling group and configure AWS WAF on it.
- D. Create and use an Amazon CloudFront distribution and configure AWS WAF on it.
- E. Create and use an internet gateway in the VPC and use AWS Shield.

**Answer:** BD

**Explanation:**

References: <https://aws.amazon.com/answers/networking/aws-ddos-attack-mitigation/>

#### NEW QUESTION 55

A group of research institutions and hospitals are in a partnership to study 2 PBs of genomic data. The institute that owns the data stores it in an Amazon S3 bucket and updates it regularly. The institute would like to give all of the organizations in the partnership read access to the data. All members of the partnership are extremely cost-conscious, and the institute that owns the account with the S3 bucket is concerned about covering the costs for requests and data transfers from Amazon S3.

Which solution allows for secure datasharing without causing the institute that owns the bucket to assume all the costs for S3 requests and data transfers?

- A. Ensure that all organizations in the partnership have AWS account
- B. In the account with the S3 bucket, create a cross-account role for each account in the partnership that allows read access to the data
- C. Have the organizations assume and use that read role when accessing the data.
- D. Ensure that all organizations in the partnership have AWS account
- E. Create a bucket policy on the bucket that owns the data
- F. The policy should allow the accounts in the partnership read access to the bucket
- G. Enable Requester Pays on the bucket
- H. Have the organizations use their AWS credentials when accessing the data.
- I. Ensure that all organizations in the partnership have AWS account
- J. Configure buckets in each of the accounts with a bucket policy that allows the institute that owns the data the ability to write to the bucket
- K. Periodically sync the data from the institute's account to the other organization
- L. Have the organizations use their AWS credentials when accessing the data using their accounts.
- M. Ensure that all organizations in the partnership have AWS account
- N. In the account with the S3 bucket, create a cross-account role for each account in the partnership that allows read access to the data

- O. Enable Requester Pays on the bucket
- P. Have the organizations assume and use that read role when accessing the data.

**Answer:** B

**Explanation:**

<https://docs.aws.amazon.com/AmazonS3/latest/dev/RequesterPaysBuckets.html>

**NEW QUESTION 56**

An enterprise runs 103 line-of-business applications on virtual machines in an on-premises data center. Many of the applications are simple PHP, Java, or Ruby web applications, are no longer actively developed, and serve little traffic.

Which approach should be used to migrate these applications to AWS with the LOWEST infrastructure costs ?

- A. Deploy the applications to single-instance AWS Elastic Beanstalk environments without a load balancer.
- B. Use AWS SMS to create AMIs for each virtual machine and run them in Amazon EC2.
- C. Convert each application to a Docker image and deploy to a small Amazon ECS cluster behind an Application Load Balancer.
- D. Use VM Import/Export to create AMIs for each virtual machine and run them in single-instance AWS Elastic Beanstalk environments by configuring a custom image.

**Answer:** A

**Explanation:**

<https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/using-features-managing-env-types.html>

**NEW QUESTION 57**

A company is creating an account strategy so that they can begin using AWS. The Security team will provide each team with the permissions they need to follow the principle of least privileged access. Teams would like to keep their resources isolated from other groups, and the Finance team would like each team's resource usage separated for billing purposes.

Which account creation process meets these requirements and allows for changes?

- A. Create a new AWS Organizations account
- B. Create groups in Active Directory and assign them to roles in AWS to grant federated access
- C. Require each team to tag their resources, and separate bills based on tag
- D. Control access to resources through IAM granting the minimally required privilege.
- E. Create individual accounts for each team
- F. Assign the security as the master account, and enable consolidated billing for all other accounts
- G. Create a cross-account role for security to manage accounts, and send logs to a bucket in the security account.
- H. Create a new AWS account, and use AWS Service Catalog to provide teams with the required resources. Implement a third-party billing to provide the Finance team with the resource use for each team based on tagging
- I. Isolate resources using IAM to avoid account sprawl
- J. Security will control and monitor logs and permissions.
- K. Create a master account for billing using Organizations, and create each team's account from that master account
- L. Create a security account for logs and cross-account access
- M. Apply service control policies on each account, and grant the Security team cross-account access to all accounts
- N. Security will create IAM policies for each account to maintain least privilege access.

**Answer:** B

**NEW QUESTION 60**

A company runs a Windows Server host in a public subnet that is configured to allow a team of administrators to connect over RDP to troubleshoot issues with hosts in a private subnet. The host must be available at all times outside of a scheduled maintenance window, and needs to receive the latest operating system updates within 3 days of release.

What should be done to manage the host with the LEAST amount of administrative effort?

- A. Run the host in a single-instance AWS Elastic Beanstalk environment
- B. Configure the environment with a custom AMI to use a hardened machine image from AWS Marketplace
- C. Apply system updates with AWS Systems Manager Patch Manager.
- D. Run the host on AWS WorkSpace
- E. Use Amazon WorkSpaces Application Manager (WAM) to harden the host
- F. Configure Windows automatic updates to occur every 3 days.
- G. Run the host in an Auto Scaling group with a minimum and maximum instance count of 1. Use a hardened machine image from AWS Marketplace
- H. Apply system updates with AWS Systems Manager Patch Manager.
- I. Run the host in AWS OpsWorks Stack
- J. Use a Chef recipe to harden the AMI during instance launch. Use an AWS Lambda scheduled event to run the Upgrade Operating System stack command to apply system updates.

**Answer:** B

**NEW QUESTION 61**

A company runs a video processing platform. Files are uploaded by users who connect to a web server, which stores them on an Amazon EFS share. This web server is running on a single Amazon EC2 instance. A different group of instances, running in an Auto Scaling group, scans the EFS share directory structure for new files to process and generates new videos (thumbnails, different resolution, compression, etc.) according to the instructions file, which is uploaded along with the video files. A different application running on a group of instances managed by an Auto Scaling group processes the video files and then deletes them from the EFS share. The results are stored in an S3 bucket. Links to the processed video files are emailed to the customer.

The company has recently discovered that as they add more instances to the Auto Scaling Group, many files are processed twice, so image processing speed is not improved. The maximum size of these video files is 2GB.

What should the Solutions Architect do to improve reliability and reduce the redundant processing of video files?

- A. Modify the web application to upload the video files directly to Amazon S3. Use Amazon CloudWatch Events to trigger an AWS Lambda function every time a

file is uploaded, and have this Lambda function put a message into an Amazon SQS queue

- B. Modify the video processing application to read from SQS queue for new files and use the queue depth metric to scale instances in the video processing Auto Scaling group.
- C. Set up a cron job on the web server instance to synchronize the contents of the EFS share into Amazon S3. Trigger an AWS Lambda function every time a file is uploaded to process the video file and store the results in Amazon S3. Using Amazon CloudWatch Events trigger an Amazon SES job to send an email to the customer containing the link to the processed file.
- D. Rewrite the web application to run directly from Amazon S3 and use Amazon API Gateway to upload the video files to an S3 bucket
- E. Use an S3 trigger to run an AWS Lambda function each time a file is uploaded to process and store new video files in a different bucket
- F. Using CloudWatch Events, trigger an SES job to send an email to the customer containing the link to the processed file.
- G. Rewrite the web application to run from Amazon S3 and upload the video files to an S3 bucket
- H. Each time a new file is uploaded, trigger an AWS Lambda function to put a message in an SQS queue containing the link and the instruction
- I. Modify the video processing application to read from the SQS queue and the S3 bucket
- J. Use the queue depth metric to adjust the size of the Auto Scaling group for video processing instances.

**Answer:** A

#### NEW QUESTION 63

A company has a High Performance Computing (HPC) cluster in its on-premises data center which runs thousands of jobs in parallel for one week every month, processing petabytes of images. The images are stored on a network file server, which is replicated to a disaster recovery site. The on-premises data center has reached capacity and has started to spread the jobs out over the course of month in order to better utilize the cluster, causing a delay in the job completion. The company has asked its Solutions Architect to design a cost-effective solution on AWS to scale beyond the current capacity of 5,000 cores and 10 petabytes of data. The solution must require the least amount of management overhead and maintain the current level of durability. Which solution will meet the company's requirements?

- A. Create a container in the Amazon Elastic Container Registry with the executable file for the job
- B. Use Amazon ECS with Spot Fleet in Auto Scaling group
- C. Store the raw data in Amazon EBS SC1 volumes and write the output to Amazon S3.
- D. Create an Amazon EMR cluster with a combination of On Demand and Reserved Instance Task Nodes that will use Spark to pull data from Amazon S3. Use Amazon DynamoDB to maintain a list of jobs that need to be processed by the Amazon EMR cluster.
- E. Store the raw data in Amazon S3, and use AWS Batch with Managed Compute Environments to create Spot Fleet
- F. Submit jobs to AWS Batch Job Queues to pull down objects from Amazon S3 onto Amazon EBS volumes for temporary storage to be processed, and then write the results back to Amazon S3.
- G. Submit the list of jobs to be processed to an Amazon SQS to queue the jobs that need to be processed. Create a diversified cluster of Amazon EC2 worker instances using Spot Fleet that will automatically scale based on the queue depth
- H. Use Amazon EFS to store all the data sharing it across all instances in the cluster.

**Answer:** B

#### NEW QUESTION 68

A company is moving a business-critical application onto AWS. It is a traditional three-tier web application using an Oracle database. Data must be encrypted in transit and at rest. The database hosts 12 TB of data. Network connectivity to the source Oracle database over the internet is allowed, and the company wants to reduce the operational costs by using AWS Managed Services where possible. All resources within the web and application tiers have been migrated. The database has a few tables and a simple schema using primary keys only; however, it contains many Binary Large Object (BLOB) fields. It was not possible to use the database's native replication tools because of licensing restrictions.

Which database migration solution will result in the LEAST amount of impact to the application's availability?

- A. Provision an Amazon RDS for Oracle instance
- B. Host the RDS database within a virtual private cloud (VPC) subnet with internet access, and set up the RDS database as an encrypted Read Replica of the source database
- C. Use SSL to encrypt the connection between the two databases
- D. Monitor the replication performance by watching the RDS ReplicaLag metric
- E. During the application maintenance window, shut down the on-premises database and switch over the application connection to the RDS instance when there is no more replication lag
- F. Promote the Read Replica into a standalone database instance.
- G. Provision an Amazon EC2 instance and install the same Oracle database software
- H. Create a backup of the source database using the supported tool
- I. During the application maintenance window, restore the backup into the Oracle database running in the EC2 instance
- J. Set up an Amazon RDS for Oracle instance, and create an import job between the database hosted in AWS
- K. Shut down the source database and switch over the database connections to the RDS instance when the job is complete.
- L. Use AWS DMS to load and replicate the dataset between the on-premises Oracle database and the replication instance hosted on AWS
- M. Provision an Amazon RDS for Oracle instance with Transparent Data Encryption (TDE) enabled and configure it as target for the replication instance
- N. Create a customer-managed AWS KMS master key to set it as the encryption key for the replication instance. Use AWS DMS tasks to load the data into the target RDS instance
- O. During the application maintenance window and after the load tasks reach the ongoing replication phase, switch the database connections to the new database.
- P. Create a compressed full database backup on the on-premises Oracle database during an application maintenance window
- Q. While the backup is being performed, provision a 10 Gbps AWS Direct Connect connection to increase the transfer speed of the database backup files to Amazon S3, and shorten the maintenance window period
- R. Use SSL/TLS to copy the files over the Direct Connect connection
- S. When the backup files are successfully copied, start the maintenance window, and use any of the Amazon RDS supported tools to import the data into a newly provisioned Amazon RDS for Oracle instance with encryption enabled
- T. Wait until the data is fully loaded and switch over the database connections to the new database
- . Delete the Direct Connect connection to cut unnecessary charges.

**Answer:** C

#### Explanation:

<https://aws.amazon.com/blogs/apn/oracle-database-encryption-options-on-amazon-rds/>

<https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/Appendix.Oracle.Options.AdvSecurity.html> | (DMS in transit encryption)

[https://docs.aws.amazon.com/dms/latest/userguide/CHAP\\_Security.html](https://docs.aws.amazon.com/dms/latest/userguide/CHAP_Security.html)



**NEW QUESTION 70**

A company has been using a third-party provider for its content delivery network and recently decided to switch to Amazon CloudFront the Development team wants to maximize performance for the global user base. The company uses a content management system (CMS) that serves both static and dynamic content. The CMS is both behind an Application Load Balancer (ALB) which is set as the default origin for the distribution. Static assets are served from an Amazon S3 bucket. The Origin Access Identity (OAI) was created properly and the S3 bucket policy has been updated to allow the GetObject action from the OAI, but static assets are receiving a 404 error.

Which combination of steps should the Solutions Architect take to fix the error? (Select TWO. )

- A. Add another origin to the CloudFront distribution for the static assets
- B. Add a path-based rule to the ALB to forward requests for the static assets
- C. Add an RTMP distribution to allow caching of both static and dynamic content
- D. Add a behavior to the CloudFront distribution for the path pattern and the origin of the static assets
- E. Add a host header condition to the ALB listener and forward the header from CloudFront to add traffic to the allow list

**Answer:** AD

**NEW QUESTION 75**

A company is adding a new approved external vendor that only supports IPv6 connectivity. The company's backend systems sit in the private subnet of an Amazon VPC. The company uses a NAT gateway to allow these systems to communicate with external vendors over IPv4. Company policy requires systems that communicate with external vendors use a security group that limits access to only approved external vendors. The virtual private cloud (VPC) uses the default network ACL.

The Systems Operator successfully assigns IPv6 addresses to each of the backend systems. The Systems Operator also updates the outbound security group to include the IPv6 CIDR of the external vendor (destination). The systems within the VPC are able to ping one another successfully over IPv6. However, these systems are unable to communicate with the external vendor.

What changes are required to enable communication with the external vendor?

- A. Create an IPv6 NAT instance
- B. Add a route for destination 0.0.0.0/0 pointing to the NAT instance.
- C. Enable IPv6 on the NAT gateway
- D. Add a route for destination ::/0 pointing to the NAT gateway.
- E. Enable IPv6 on the internet gateway
- F. Add a route for destination 0.0.0.0/0 pointing to the IGW.
- G. Create an egress-only internet gateway
- H. Add a route for destination ::/0 pointing to the gateway.

**Answer:** D

**Explanation:**

<https://docs.aws.amazon.com/vpc/latest/userguide/egress-only-internet-gateway.html>

**NEW QUESTION 77**

An enterprise company is using a multi-account AWS strategy. There are separate accounts for development, staging, and production workloads. To control costs and improve governance, the following requirements have been defined:

- The company must be able to calculate the AWS costs for each project
- The company must be able to calculate the AWS costs for each environment: development, staging, and production
- Commonly deployed IT services must be centrally managed
- Business units can deploy pre-approved IT services only
- Usage of AWS resources in the development account must be limited

Which combination of actions should be taken to meet these requirements? (Select THREE. )

- A. Apply environment, cost center, and application name tags to all taggable resources
- B. Configure custom budgets and define thresholds using Cost Explorer
- C. Configure AWS Trusted Advisor to obtain weekly emails with cost-saving estimates
- D. Create a portfolio for each business unit and add products to the portfolios using AWS CloudFormation in AWS Service Catalog
- E. Configure a billing alarm in Amazon CloudWatch.
- F. Configure SCPs in AWS Organizations to allow services available using AWS

**Answer:** CEF

**NEW QUESTION 81**

A company is refactoring an existing web service that provides read and write access to structured data. The service must respond to short but significant spikes in the system load. The service must be fault tolerant across multiple AWS Regions.

Which actions should be taken to meet these requirements?

- A. Store the data in Amazon DocumentDB. Create a single global Amazon CloudFront distribution with a custom origin built on edge-optimized Amazon API Gateway and AWS Lambda. Assign the company's domain as an alternate domain for the distribution.
- B. and configure Amazon Route 53 with an alias to the CloudFront distribution.
- C. Store the data in replicated Amazon S3 buckets in two Regions. Create an Amazon CloudFront distribution in each Region, with custom origins built on Amazon API Gateway and AWS Lambda launched in each Region. Assign the company's domain as an alternate domain for both distributions and configure Amazon Route 53 with a failover routing policy between them.
- D. Store the data in an Amazon DynamoDB global table in two Regions using on-demand capacity mode. In both Regions, run the web service as Amazon ECS Fargate tasks in an Auto Scaling ECS service behind an Application Load Balancer (ALB). In Amazon Route 53, configure an alias record in the company's domain and a Route 53 latency-based routing policy with health checks to distribute traffic between the two ALBs.

**Answer:** A

**NEW QUESTION 83**

A company that provides wireless services needs a solution to store and analyze log files about user activities. Currently, log files are delivered daily to Amazon Linux on an Amazon EC2 instance. A batch script is run once a day to aggregate data used for analysis by a third-party tool. The data pushed to the third-party tool is

used to generate a visualization for end users. The batch script is cumbersome to maintain, and it takes several hours to deliver the ever-increasing data volumes to the third-party tool. The company wants to lower costs, and is open to considering a new tool that minimizes development effort and lowers administrative overhead. The company wants to build a more agile solution that can store and perform the analysis in near-real time, with minimal overhead. The solution needs to be cost effective and scalable to meet the company's end-user base growth. Which solution meets the company's requirements?

- A. Develop a Python script to failure the data from Amazon EC2 in real time and store the data in Amazon S3. Use a copy command to copy data from Amazon S3 to Amazon Redshift
- B. Connect a business intelligence tool running on Amazon EC2 to Amazon Redshift and create the visualizations.
- C. Use an Amazon Kinesis agent running on an EC2 instance in an Auto Scaling group to collect and send the data to an Amazon Kinesis Data Firehose delivery stream
- D. The Kinesis Data Firehose delivery stream will deliver the data directly to Amazon E
- E. Use Kibana to visualize the data.
- F. Use an in-memory caching application running on an Amazon EBS-optimized EC2 instance to capture the log data in near real-time
- G. Install an Amazon ES cluster on the same EC2 instance to store the log files as they are delivered to Amazon EC2 in near real-time
- H. Install a Kibana plugin to create the visualizations.
- I. Use an Amazon Kinesis agent running on an EC2 instance to collect and send the data to an Amazon Kinesis Data Firehose delivery stream
- J. The Kinesis Data Firehose delivery stream will deliver the data to Amazon S3. Use an AWS Lambda function to deliver the data from Amazon S3 to Amazon E
- K. Use Kibana to visualize the data.

**Answer:** B

**Explanation:**

<https://docs.aws.amazon.com/firehose/latest/dev/writing-with-agents.html>

#### NEW QUESTION 88

A finance company is running its business-critical application on current-generation Linux EC2 instances. The application includes a self-managed MySQL database performing heavy I/O operations. The application is working fine to handle a moderate amount of traffic during the month. However, it slows down during the final three days of each month due to month-end reporting, even though the company is using Elastic Load Balancers and Auto Scaling within its infrastructure to meet the increased demand.

Which of the following actions would allow the database to handle the month-end load with the LEAST impact on performance?

- A. Pre-warming Elastic Load Balancers, using a bigger instance type, changing all Amazon EBS volumes to GP2 volumes.
- B. Performing a one-time migration of the database cluster to Amazon RDS, and creating several additional read replicas to handle the load during end of month.
- C. Using Amazon CloudWatch with AWS Lambda to change the type, size, or IOPS of Amazon EBS volumes in the cluster based on a specific CloudWatch metric.
- D. Replacing all existing Amazon EBS volumes with new PIOPS volumes that have the maximum available storage size and I/O per second by taking snapshots before the end of the month and reverting back afterwards.

**Answer:** B

#### NEW QUESTION 90

A company is migrating to the cloud. It wants to evaluate the configurations of virtual machines in its existing data center environment to ensure that it can size new Amazon EC2 instances accurately. The company wants to collect metrics, such as CPU, memory, and disk utilization, and it needs an inventory of what processes are running on each instance. The company would also like to monitor network connections to map communications between servers.

Which would enable the collection of this data MOST cost effectively?

- A. Use AWS Application Discovery Service and deploy the data collection agent to each virtual machine in the data center.
- B. Configure the Amazon CloudWatch agent on all servers within the local environment and publish metrics to Amazon CloudWatch Logs.
- C. Use AWS Application Discovery Service and enable agentless discovery in the existing virtualization environment.
- D. Enable AWS Application Discovery Service in the AWS Management Console and configure the corporate firewall to allow scans over a VPN.

**Answer:** A

#### NEW QUESTION 91

The company Security team requires that all data uploaded into an Amazon S3 bucket must be encrypted. The encryption keys must be highly available and the company must be able to control access on a per-user basis, with different users having access to different encryption keys.

Which of the following architectures will meet these requirements? (Choose two.)

- A. Use Amazon S3 server-side encryption with Amazon S3-managed key
- B. Allow Amazon S3 to generate an AWS/S3 master key, and use IAM to control access to the data keys that are generated.
- C. Use Amazon S3 server-side encryption with AWS KMS-managed keys, create multiple customer master keys, and use key policies to control access to them.
- D. Use Amazon S3 server-side encryption with customer-managed keys, and use AWS CloudHSM to manage the key
- E. Use CloudHSM client software to control access to the keys that are generated.
- F. Use Amazon S3 server-side encryption with customer-managed keys, and use two AWS CloudHSM instances configured in high-availability mode to manage the key
- G. Use the Cloud HSM client software to control access to the keys that are generated.
- H. Use Amazon S3 server-side encryption with customer-managed keys, and use two AWS CloudHSM instances configured in high-availability mode to manage the key
- I. Use IAM to control access to the keys that are generated in CloudHSM.

**Answer:** BD

**Explanation:**

<http://websecuritypatterns.com/blogs/2018/03/01/encryption-and-key-management-in-aws-kms-vs-cloudhsm-mys/>

#### NEW QUESTION 93

An internal security audit of AWS resources within a company found that a number of Amazon EC2 instances running Microsoft Windows workloads were missing several important operating system-level patches. A Solutions Architect has been asked to fix existing patch deficiencies, and to develop a workflow to ensure that

future patching requirements are identified and taken care of quickly. The Solutions Architect has decided to use AWS Systems Manager. It is important that EC2 instance reboots do not occur at the same time on all Windows workloads to meet organizational uptime requirements. Which workflow will meet these requirements in an automated manner?

- A. Add a Patch Group tag with a value of Windows Servers to all existing EC2 instance
- B. Ensure that all Windows EC2 instances are assigned this ta
- C. Associate the AWS-DefaultPatchBaseline to the Windows servers patch grou
- D. Define an AWS Systems Manager maintenance window, conduct patching within it, and associate it with the Windows Servers patch grou
- E. Register instances with the maintenance window using associated subnet ID
- F. Assign the AWS-RunPatchBaseline document as a task within each maintenance window.
- G. Add a Patch Group tag a value of Windows Servers to all existing EC2 instance
- H. Ensure that all Windows EC2 instances are assigned this ta
- I. Associate the AWS-WindowsPatchBaseline document as a task associated with the Windows Servers patch grou
- J. Create an Amazon CloudWatch Events rule configured to use a cron expression to schedule the execution of patching using the AWS Systems Manager run comman
- K. Create an AWS Systems Manager State Manager document to define commands to be executed during patch execution.
- L. Add a Patch Group tag with a value of either Windows Servers1 or Windows Server2 to all existing EC2 instance
- M. Ensure that all Windows EC2 instances are assigned this ta
- N. Associate theAWS-DefaultPatchBaseline with both Windows Servers patch group
- O. Define two non-overlappingAWS Systems Manager maintenance windows, conduct patching within them, and associate each with a different patch group
- P. Register targets with specific maintenance windows using the Patch Group tag
- Q. Assign the AWS-RunPatchBaseline document as a task within each maintenance window.
- R. Add a Patch Group tag with a value of either Windows servers1 or Windows Server2 to all existing EC2 instance
- S. Ensure that all Windows EC2 instances are assigned this ta
- T. Associate theAWS-WindowsPatchBaseline with both Windows Servers patch group
- . Define two non-overlappingAWS Systems Manager maintenance windows, conduct patching within them, and associate each with a different patch group
- . Assign the AWS-RunWindowsPatchBaseline document as a task within each maintenance windo
- . Create an AWS Systems Manager State Manager document to define commands to be executed during patch execution.

**Answer: C**

#### NEW QUESTION 98

A company has a large on-premises Apache Hadoop cluster with a 20 PB HDFS database. The cluster is growing every quarter by roughly 200 instances and 1 PB. The company's goals are to enable resiliency for its Hadoop data, limit the impact of losing cluster nodes, and significantly reduce costs. The current cluster runs 24/7 and supports a variety of analysis workloads, including interactive queries and batch processing. Which solution would meet these requirements with the LEAST expense and down time?

- A. Use AWS Snowmobile to migrate the existing cluster data to Amazon S3. Create a persistent Amazon EMR cluster initially sized to handle the interactive workload based on historical data from theon-premises cluste
- B. Store the data on EMRF
- C. Minimize costs using Reserved Instances for master and core nodes and Spot Instances for task nodes, and auto scale task nodes based on Amazon CloudWatch metric
- D. Create job-specific, optimized clusters for batch workloads that are similarly optimized.
- E. Use AWS Snowmobile to migrate the existing cluster data to Amazon S3. Create a persistent Amazon EMR cluster of similar size and configuration to the current cluste
- F. Store the data on EMRF
- G. Minimize costs by using Reserved Instance
- H. As the workload grows each quarter, purchase additional Reserved Instances and add to the cluster.
- I. Use AWS Snowball to migrate the existing cluster data to Amazon S3. Create a persistent Amazon EMR cluster initially sized to handle the interactive workloads based on historical data from theon-premises cluste
- J. Store the on EMRF
- K. Minimize costs using Reserved Instances for master and core nodes and Spot Instances for task nodes, and auto scale task nodes based on Amazon CloudWatch metric
- L. Create job-specific, optimized clusters for batch workloads that are similarly optimized.
- M. Use AWS Direct Connect to migrate the existing cluster data to Amazon S3. Create a persistent Amazon EMR cluster initially sized to handle the interactive workload based on historical data from theon-premises cluste
- N. Store the data on EMRF
- O. Minimize costs using Reserved Instances for master and core nodes and Spot Instances for task nodes, and auto scale task nodes based on Amazon CloudWatch metric
- P. Create job-specific, optimized clusters for batch workloads that are similarly optimized.

**Answer: A**

#### Explanation:

Q: How should I choose between Snowmobile and Snowball?

To migrate large datasets of 10PB or more in a single location, you should use Snowmobile. For datasets less than 10PB or distributed in multiple locations, you should use Snowball. In addition, you should evaluate the amount of available bandwidth in your network backbone. If you have a high speed backbone with hundreds of Gb/s of spare throughput, then you can use Snowmobile to migrate the large datasets all at once. If you have limited bandwidth on your backbone, you should consider using multiple Snowballs to migrate the data incrementally.

#### NEW QUESTION 100

A company has an internal AWS Elastic Beanstalk worker environment inside a VPC that must access an external payment gateway API available on an HTTPS endpoint the public internet Because of security policies, the payment gateway's Application team can grant access to only one public IP address. Which architecture will set up an Elastic Beanstalk environment to access the company's application without making multiple changes on the company's end?

- A. Configure the Elastic Beanstalk application to place Amazon EC2 instances in a private subnet with an outbound route to a NAT gateway in a public subnet Associate an Elastic IP address to the NAT gateway that can be whitelisted on the payment gateway application side
- B. Configure the Elastic Beanstalk application to place Amazon EC2 instances in a public subnet with an internet gateway Associate an Elastic IP address to the internet gateway that can be whitelisted on the payment gateway application side
- C. Configure the Elastic Beanstalk application to place Amazon EC2 instances in a private subnet Set an https\_proxy application parameter to send outbound HTTPS connections to an EC2 proxy server deployed in a public subnet Associate an Elastic IP address to the EC2 proxy host that can be whitelisted on the



payment gateway application side

D. Configure the Elastic Beanstalk application to place Amazon EC2 instances in a public subnet Set the https\_proxy and no\_proxy application parameters to send non-VPC outbound HTTPS connections to an EC2 proxy server deployed in a public subnet Associate an Elastic IP address to the EC2 proxy host that can be whitelisted on the payment gateway application side

**Answer: C**

#### NEW QUESTION 101

A Solutions Architect must migrate an existing on-premises web application with 70 TB of static files supporting a public open-data initiative. The architect wants to upgrade to the latest version of the host operating system as part of the migration effort. Which is the FASTEST and MOST cost-effective way to perform the migration?

- A. Run a physical-to-virtual conversion on the application serve
- B. Transfer the server image over the internet, and transfer the static data to Amazon S3.
- C. Run a physical-to-virtual conversion on the application serve
- D. Transfer the server image over AWS Direct Connect, and transfer the static data to Amazon S3.
- E. Re-platform the server to Amazon EC2, and use AWS Snowball to transfer the static data to Amazon S3.
- F. Re-platform the server by using the AWS Server Migration Service to move the code and data to a new Amazon EC2 instance.

**Answer: C**

#### NEW QUESTION 106

A company wants to replace its call system with a solution built using AWS managed services. The company call center would like the solution to receive calls, create contact flows, and scale to handle growth projections. The call center would also like the solution to use deep learning capabilities to recognize the intent of the callers and handle basic tasks, reducing the need to speak an agent. The solution should also be able to query business applications and provide relevant information back to calls as requested.

Which services should the Solution Architect use to build this solution? (Choose three.)

- A. Amazon Rekognition to identity who is calling.
- B. Amazon Connect to create a cloud-based contact center.
- C. Amazon Alexa for Business to build conversational interface.
- D. AWS Lambda to integrate with internal systems.
- E. Amazon Lex to recognize the intent of the caller.
- F. Amazon SQS to add incoming callers to a queue.

**Answer: BDE**

#### NEW QUESTION 107

A company is planning to migrate an application from on-premises to AWS. The application currently uses an Oracle database and the company can tolerate a brief downtime of 1 hour when performing the switch to the new infrastructure. As part of the migration, the database engine will be changed to MySQL. A Solutions Architect needs to determine which AWS services can be used to perform the migration while minimizing the amount of work and time required. Which of the following will meet the requirements?

- A. Use AWS SCT to generate the schema scripts and apply them on the target prior to migratio
- B. Use AWS DMS to analyse the current schema and provide a recommendation for the optimal database engin
- C. Then, use AWS DMS to migrate to the recommended engine
- D. Use AWS SCT to identify what embedded SQL code in the application can be converted and what has to be done manually.
- E. Use AWS SCT to generate the schema scripts and apply them on the target prior to migratio
- F. Use AWS DMS to begin moving data from the on-premises database to AW
- G. After the initial copy, continue to use AWS DMS to keep the databases in sync until cutting over to the new databas
- H. Use AWS SCT to identify what embedded SQL code in the application can be converted and what has to be done manually.
- I. Use AWS DMS to help identify the best target deployment between installing the database engine on Amazon EC2 directly or moving to Amazon RD
- J. Then, use AWS DMS to migrate to the platfor
- K. Use AWS Application Discovery Service to identify what embedded SQL code in the application can be converted and what has to be done manually.
- L. Use AWS DMS to begin moving data from the on-premises database to AW
- M. After the initial copy, continue to use AWS DMS to keep the databases in sync until cutting over to the new databas
- N. Use AWS Application Discovery Service to identify what embedded SQL code in the application can be converted and what has to be done manually.

**Answer: B**

#### NEW QUESTION 112

An organization has a write-intensive mobile application that uses Amazon API Gateway, AWS Lambda, and Amazon DynamoDB. The application has scaled well, however, costs have increased exponentially because of higher than anticipated Lambda costs. The application's use is unpredictable, but there has been a steady 20% increase in utilization every month.

While monitoring the current Lambda functions, the Solutions Architect notices that the execution-time averages 4.5 minutes. Most of the wait time is the result of a high-latency network call to a 3-TB MySQL database server that is on-premises. A VPN is used to connect to the VPC, so the Lambda functions have been configured with a five-minute timeout.

How can the Solutions Architect reduce the cost of the current architecture?

- A. Replace the VPN with AWS Direct Connect to reduce the network latency to the on-premises MySQL database.Enable local caching in the mobile application to reduce the Lambda function invocation calls.Monitor the Lambda function performance; gradually adjust the timeout and memory properties to lower values while maintaining an acceptable execution time.Offload the frequently accessed records from DynamoDB to Amazon ElastiCache.
- B. Replace the VPN with AWS Direct Connect to reduce the network latency to the on-premises MySQL database.Cache the API Gateway results to Amazon CloudFront.Use Amazon EC2 Reserved Instances instead of Lambda.Enable Auto Scaling on EC2, and use Spot Instances during peak times.Enable DynamoDB Auto Scaling to manage target utilization.
- C. Migrate the MySQL database server into a Multi-AZ Amazon RDS for MySQL.Enable caching of the Amazon API Gateway results in Amazon CloudFront to reduce the number of Lambda function invocations.Monitor the Lambda function performance; gradually adjust the timeout and memory properties to lower values while maintaining an acceptable execution time.Enable DynamoDB Accelerator for frequently accessed records, and enable the DynamoDB Auto Scaling feature.
- D. Migrate the MySQL database server into a Multi-AZ Amazon RDS for MySQL.Enable API caching on API Gateway to reduce the number of Lambda function

invocations. Continue to monitor the AWS Lambda function performance; gradually adjust the timeout and memory properties to lower values while maintaining an acceptable execution time. Enable Auto Scaling in DynamoDB.

**Answer:** D

#### NEW QUESTION 116

A company is currently using AWS CodeCommit for its source control and AWS CodePipeline for continuous integration. The pipeline has a build stage for building the artifacts which is then staged in an Amazon S3 bucket.

The company has identified various improvement opportunities in the existing process, and a Solutions Architect has been given the following requirement:

- Create a new pipeline to support feature development
- Support feature development without impacting production applications
- Incorporate continuous testing with unit tests
- Isolate development and production artifacts
- Support the capability to merge tested code into production code. How should the Solutions Architect achieve these requirements?

- A. Trigger a separate pipeline from CodeCommit feature branche
- B. Use AWS CodeBuild for running unit test
- C. Use CodeBuild to stage the artifacts within an S3 bucket in a separate testing account.
- D. Trigger a separate pipeline from CodeCommit feature branche
- E. Use AWS Lambda for running unit test
- F. Use AWS CodeDeploy to stage the artifacts within an S3 bucket in a separate testing account.
- G. Trigger a separate pipeline from CodeCommit tags Use Jenkins for running unit test
- H. Create a stage in the pipeline with S3 as the target for staging the artifacts with an S3 bucket in a separate testing account.
- I. Create a separate CodeCommit repository for feature development and use it to trigger the pipelin
- J. Use AWS Lambda for running unit test
- K. Use AWS CodeBuild to stage the artifacts within different S3 buckets in the same production account.

**Answer:** A

#### Explanation:

<https://docs.aws.amazon.com/codebuild/latest/userguide/how-to-create-pipeline.html>

#### NEW QUESTION 117

An online retailer needs to regularly process large product catalogs, which are handled in batches. These are sent out to be processed by people using the Amazon Mechanical Turk service, but the retailer has asked its Solutions Architect to design a workflow orchestration system that allows it to handle multiple concurrent Mechanical Turk operations, deal with the result assessment process, and reprocess failures.

Which of the following options gives the retailer the ability to interrogate the state of every workflow with the LEAST amount of implementation effort?

- A. Trigger Amazon CloudWatch alarms based upon message visibility in multiple Amazon SQS queues (one queue per workflow stage) and send messages via Amazon SNS to trigger AWS Lambda functions to process the next ste
- B. Use Amazon ES and Kibana to visualize Lambda processing logs to see the workflow states.
- C. Hold workflow information in an Amazon RDS instance with AWS Lambda functions polling RDS for status change
- D. Worker Lambda functions then process the next workflow step
- E. Amazon QuickSight will visualize workflow states directly out of Amazon RDS.
- F. Build the workflow in AWS Step Functions, using it to orchestrate multiple concurrent workflow
- G. The status of each workflow can be visualized in the AWS Management Console, and historical data can be written to Amazon S3 and visualized using Amazon QuickSight.
- H. Use Amazon SWF to create a workflow that handles a single batch of catalog records with multiple worker tasks to extract the data, transform it, and send it through Mechanical Tur
- I. Use Amazon ES and Kibana to visualize AWS Lambda processing logs to see the workflow states.

**Answer:** C

#### Explanation:

AWS Step Functions is a fully managed service that makes it easy to coordinate the components of distributed applications and microservices using visual workflows. Instead of writing a Decider program, you define state machines in JSON. AWS customers should consider using Step Functions for new applications. If Step Functions does not fit your needs, then you should consider Amazon Simple Workflow (SWF). Amazon SWF provides you complete control over your orchestration logic, but increases the complexity of developing applications. You may write decider programs in the programming language of your choice, or you may use the Flow framework to use programming constructs that structure asynchronous interactions for you. AWS will continue to provide the Amazon SWF service, Flow framework, and support all Amazon SWF customers. <https://aws.amazon.com/swf/faqs/>

#### NEW QUESTION 119

A company is finalizing the architecture for its backup solution for applications running on AWS. All of the applications run on AWS and use at least two Availability Zones in each tier.

Company policy requires IT to durably store nightly backups for all its data in at least two locations: production and disaster recovery. The locations must be in different geographic regions. The company also needs the backup to be available to restore immediately at the production data center, and within 24 hours at the disaster recovery location. All backup processes must be fully automated.

What is the MOST cost-effective backup solution that will meet all requirements?

- A. Back up all the data to a large Amazon EBS volume attached to the backup media server in the production regio
- B. Run automated scripts to snapshot these volumes nightly, and copy these snapshots to the disaster recovery region.
- C. Back up all the data to Amazon S3 in the disaster recovery regio
- D. Use a lifecycle policy to move this data to Amazon Glacier in the production region immediatel
- E. Only the data is replicated; remove the data from the S3 bucket in the disaster recovery region.
- F. Back up all the data to Amazon Glacier in the production regio
- G. Set up cross-region replication of this data to Amazon Glacier in the disaster recovery regio
- H. Set up a lifecycle policy to delete any data older than 60 days.

- I. Back up all the data to Amazon S3 in the production regio
- J. Set up cross-region replication of this S3 bucket to another region and set up a lifecycle policy in the second region to immediately move this data to Amazon Glacier.

**Answer: D**

#### NEW QUESTION 121

A company is running a web application with On-Demand Amazon EC2 instances in Auto Scaling groups that scale dynamically based on custom metrics After extensive testing the company determines that the m5 2xlarge instance size is optimal for the workload Application data is stored in db r4 4xlarge Amazon RDS instances that are confirmed to be optimal The traffic to the web application spikes randomly during the day What other cost-optimization methods should the company implement to further reduce costs without impacting the reliability of the application?

- A. Double the instance count in the Auto Scaling groups and reduce the instance size to m5 large
- B. Reserve capacity for the RDS database and the minimum number of EC2 instances that are constantly running
- C. Reduce the RDS instance size to db r4 xlarge and add five equivalents sized read replicas to provide reliability
- D. Reserve capacity for all EC2 instances and leverage Spot Instance pricing for the RDS database

**Answer: B**

#### NEW QUESTION 122

A company is running a large application on-premises. Its technology stack consists of Microsoft .NET for the web server platform and Apache Cassandra for the database. The company wants to migrate the application to AWS to improve service reliability. The IT team also wants to reduce the time it spends on capacity management and maintenance of this infrastructure. The Development team is willing and available to make code changes to support the migration. Which design is the LEAST complex to manage after the migration?

- A. Migrate the web servers to Amazon EC2 instances in an Auto Scaling group that is running .NE
- B. Migrate the existing Cassandra database to Amazon Aurora with multiple read replicas, and run both in a Multi-AZ mode.
- C. Migrate the web servers to an AWS Elastic Beanstalk environment that is running the .NET platform in a Multi-AZ Auto Scaling configuratio
- D. Migrate the Cassandra database to Amazon EC2 instances that are running in a Multi-AZ configuration.
- E. Migrate the web servers to an AWS Elastic Beanstalk environment that is running the .NET platform in a Multi-AZ Auto Scaling configuratio
- F. Migrate the existing Cassandra database to Amazon DynamoDB.
- G. Migrate the web servers to Amazon EC2 instances in an Auto Scaling group that is running .NE
- H. Migrate the existing Cassandra database to Amazon DynamoDB.

**Answer: B**

#### NEW QUESTION 125

A company is using an Amazon CloudFront distribution to distribute both static and dynamic content from a web application running behind an Application Load Balancer. The web application requires user authorization and session tracking for dynamic content. The CloudFront distribution has a single cache behavior configured to forward the Authorization, Host, and User-Agent HTTP whitelist headers and a session cookie to the origin. All other cache behavior settings are set to their default value.

A valid ACM certificate is applied to the CloudFront distribution with a matching CNAME in the distribution settings. The ACM certificate is also applied to the HTTPS listener for the Application Load Balancer. The CloudFront origin protocol policy is set to HTTPS only. Analysis of the cache statistics report shows that the miss rate for this distribution is very high.

What can the Solutions Architect do to improve the cache hit rate for this distribution without causing the SSL/TLS handshake between CloudFront and the Application Load Balancer to fail?

- A. Create two cache behaviors for static and dynamic conten
- B. Remove the User-Agent and Host HTTP headers from the whitelist headers section on both if the cache behavior
- C. Remove the session cookie from the whitelist cookies section and the Authorization HTTP header from the whitelist headers section for cache behavior configured for static content.
- D. Remove the User-Agent and Authorization HTTP headers from the whitelist headers section of the cache behavio
- E. Then update the cache behavior to use presigned cookies for authorization.
- F. Remove the Host HTTP header from the whitelist headers section and remove the session cookie from the whitelist cookies section for the default cache behavio
- G. Enable automatic object compression and use Lambda@Edge viewer request events for user authorization.
- H. Create two cache behaviors for static and dynamic conten
- I. Remove the User-Agent HTTP header from the whitelist headers section on both of the cache behavior
- J. Remove the session cookie from the whitelist cookies section and the Authorization HTTP header from the whitelist headers section for cache behavior configured for static content.

**Answer: D**

#### NEW QUESTION 126

A company wants to replace its call system with a solution built using AWS managed services. The company call center would like the solution to receive calls, create contact flows, and scale to handle growth projections. The call center would also like the solution to use deep learning capabilities to recognize the intent of the callers and handle basic tasks, reducing the need to speak an agent. The solution should also be able to query business applications and provide relevant information back to calls as requested.

Which services should the Solution Architect use to build this solution? (Choose three.)

- A. Amazon Rekognition to identity who is calling.
- B. Amazon Connect to create a cloud-based contact center.
- C. Amazon Alexa for Business to build conversational interface.
- D. AWS Lambda to integrate with internal systems.
- E. Amazon Lex to recognize the intent of the caller.
- F. Amazon SQS to add incoming callers to a queue.

**Answer: BDE**



#### NEW QUESTION 128

A company currently uses a single 1 Gbps AWS Direct Connect connection to establish connectivity between an AWS Region and its data center. The company has five Amazon VPCs, all of which are connected to the data center using the same Direct Connect connection. The Network team is worried about the single point of failure and is interested in improving the redundancy of the connections to AWS while keeping costs to a minimum. Which solution would improve the redundancy of the connection to AWS while meeting the cost requirements?

- A. Provision another 1 Gbps Direct Connect connection and create new VIFs to each of the VPCs. Configure the VIFs in a load balancing fashion using BGP.
- B. Set up VPN tunnels from the data center to each VPC.
- C. Terminate each VPN tunnel at the virtual private gateway (VGW) of the respective VPC and set up BGP for route management.
- D. Set up a new point-to-point Multiprotocol Label Switching (MPLS) connection to the AWS Region that's being used.
- E. Configure BGP to use this new circuit as passive, so that no traffic flows through this unless the AWS Direct Connect fails.
- F. Create a public VIF on the Direct Connect connection and set up a VPN tunnel which will terminate on the virtual private gateway (VGW) of the respective VPC using the public VIF.
- G. Use BGP to handle the failover to the VPN connection.

**Answer: B**

#### NEW QUESTION 131

A Solutions Architect needs to design a highly available application that will allow authenticated users to stay connected to the application even when there are underlying failures. Which solution will meet these requirements?

- A. Deploy the application on Amazon EC2 instances. Use Amazon Route 53 to forward requests to the EC2 instances. Use Amazon DynamoDB to save the authenticated connection details.
- B. Deploy the application on Amazon EC2 instances in an Auto Scaling group. Use an internet-facing Application Load Balancer to handle requests. Use Amazon DynamoDB to save the authenticated connection details.
- C. Deploy the application on Amazon EC2 instances in an Auto Scaling group. Use an internet-facing Application Load Balancer on the front end. Use EC2 instances to save the authenticated connection details.
- D. Deploy the application on Amazon EC2 instances in an Auto Scaling group. Use an internet-facing Application Load Balancer on the front end. Use EC2 instances hosting a MySQL database to save the authenticated connection details.

**Answer: B**

#### NEW QUESTION 135

A large company is migrating its entire IT portfolio to AWS. Each business unit in the company has a standalone AWS account that supports both development and test environments. New accounts to support production workloads will be needed soon. The Finance department requires a centralized method for payment but must maintain visibility into each group's spending to allocate costs. The Security team requires a centralized mechanism to control IAM usage in all the company's accounts. What combination of the following options meet the company's needs with LEAST effort? (Choose two.)

- A. Use a collection of parameterized AWS CloudFormation templates defining common IAM permissions that are launched into each account.
- B. Require all new and existing accounts to launch the appropriate stacks to enforce the least privilege model.
- C. Use AWS Organizations to create a new organization from a chosen payer account and define an organizational unit hierarchy.
- D. Invite the existing accounts to join the organization and create new accounts using Organizations.
- E. Require each business unit to use its own AWS account.
- F. Tag each AWS account appropriately and enable Cost Explorer to administer chargebacks.
- G. Enable all features of AWS Organizations and establish appropriate service control policies that filter IAM permissions for sub-accounts.
- H. Consolidate all of the company's AWS accounts into a single AWS account.
- I. Use tags for billing purposes and IAM's Access Advice feature to enforce the least privilege model.

**Answer: BD**

#### NEW QUESTION 137

A media storage application uploads user photos to Amazon S3 for processing. End users are reporting that some uploaded photos are not being processed properly. The Application Developers trace the logs and find that AWS Lambda is experiencing execution issues when thousands of users are on the system simultaneously. Issues are caused by:

- Limits around concurrent executions.
- The performance of Amazon DynamoDB when saving data.

Which actions can be taken to increase the performance and reliability of the application? (Choose two.)

- A. Evaluate and adjust the read capacity units (RCUs) for the DynamoDB tables.
- B. Evaluate and adjust the write capacity units (WCUs) for the DynamoDB tables.
- C. Add an Amazon ElastiCache layer to increase the performance of Lambda functions.
- D. Configure a dead letter queue that will reprocess failed or timed-out Lambda functions.
- E. Use S3 Transfer Acceleration to provide lower-latency access to end users.

**Answer: BD**

#### Explanation:

B: [https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/HowItWorks.ReadWriteCapacityMode.h](https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/HowItWorks.ReadWriteCapacityMode.html)  
D: <https://aws.amazon.com/blogs/compute/robust-serverless-application-design-with-aws-lambda-dlq/>

#### NEW QUESTION 140

A company has deployed an application to multiple environments in AWS, including production and testing. The company has separate accounts for production and testing, and users are allowed to create additional application users for team members or services, as needed. The Security team has asked the Operations team for better isolation between production and testing with centralized controls on security credentials and improved management of permissions between

environments.

Which of the following options would MOST securely accomplish this goal?

- A. Create a new AWS account to hold user and service accounts, such as an identity account
- B. Create users and groups in the identity account
- C. Create roles with appropriate permissions in the production and testing account
- D. Add the identity account to the trust policies for the roles.
- E. Modify permissions in the production and testing accounts to limit creating new IAM users to members of the Operations team
- F. Set a strong IAM password policy on each account
- G. Create new IAM users and groups in each account to limit developer access to just the services required to complete their job function.
- H. Create a script that runs on each account that checks user accounts for adherence to a security policy. Disable any user or service accounts that do not comply.
- I. Create all user accounts in the production account
- J. Create roles for access in the production account and testing account
- K. Grant cross-account access from the production account to the testing account.

**Answer:** A

**Explanation:**

<https://aws.amazon.com/blogs/security/how-to-centralize-and-automate-iam-policy-creation-in-sandbox-develop>

#### NEW QUESTION 142

A company is having issues with a newly deployed serverless infrastructure that uses Amazon API Gateway, Amazon Lambda, and Amazon DynamoDB. In a steady state, the application performs as expected. However, during peak load, tens of thousands of simultaneous invocations are needed and user requests fail multiple times before succeeding. The company has checked the logs for each component, focusing specifically on Amazon CloudWatch Logs for Lambda. There are no errors logged by the services or applications. What might cause this problem?

- A. Lambda has very little memory assigned, which causes the function to fail at peak load.
- B. Lambda is in a subnet that uses a NAT gateway to reach out to the internet, and the function instance does not have sufficient Amazon EC2 resources in the VPC to scale with the load.
- C. The throttle limit set on API Gateway is very low during peak load, the additional requests are not making their way through to Lambda
- D. DynamoDB is set up in an auto scaling mode
- E. During peak load, DynamoDB adjusts capacity and through successfully.

**Answer:** A

#### NEW QUESTION 147

A large global company wants to migrate a stateless mission-critical application to AWS. The application is based on IBM WebSphere (application and integration middleware), IBM MQ (messaging middleware), and IBM DB2 (database software) on a z/OS operating system. How should the Solutions Architect migrate the application to AWS?

- A. Re-host WebSphere-based applications on Amazon EC2 behind a load balancer with Auto Scaling. Re-platform the IBM MQ to an Amazon EC2-based MQ
- B. Re-platform the z/OS-based DB2 to Amazon RDS DB2.
- C. Re-host WebSphere-based applications on Amazon EC2 behind a load balancer with Auto Scaling. Re-platform the IBM MQ to an Amazon MQ
- D. Re-platform z/OS-based DB2 to Amazon EC2-based DB2.
- E. Orchestrate and deploy the application by using AWS Elastic Beanstalk
- F. Re-platform the IBM MQ to Amazon SQS
- G. Re-platform z/OS-based DB2 to Amazon RDS DB2.
- H. Use the AWS Server Migration Service to migrate the IBM WebSphere and IBM DB2 to an Amazon EC2-based solution
- I. Re-platform the IBM MQ to an Amazon MQ.

**Answer:** B

**Explanation:**

<https://aws.amazon.com/blogs/database/aws-database-migration-service-and-aws-schema-conversion-tool-now->  
<https://aws.amazon.com/quickstart/architecture/ibm-mq/>

#### NEW QUESTION 148

A company has an application that runs a web service on Amazon EC2 instances and stores .jpg images in Amazon S3. The web traffic has a predictable baseline, but often demand spikes unpredictably for short periods of time. The application is loosely coupled and stateless. The .jpg images stored in Amazon S3 are accessed frequently for the first 15 to 20 days, they are seldom accessed thereafter but always need to be immediately available. The CIO has asked to find ways to reduce costs.

Which of the following options will reduce costs? (Choose two.)

- A. Purchase Reserved instances for baseline capacity requirements and use On-Demand instances for the demand spikes.
- B. Configure a lifecycle policy to move the .jpg images on Amazon S3 to S3 IA after 30 days.
- C. Use On-Demand instances for baseline capacity requirements and use Spot Fleet instances for the demand spikes.
- D. Configure a lifecycle policy to move the .jpg images on Amazon S3 to Amazon Glacier after 30 days.
- E. Create a script that checks the load on all web servers and terminates unnecessary On-Demand instances.

**Answer:** AB

#### NEW QUESTION 153

A company has an application that generates a weather forecast that is updated every 15 minutes with an output resolution of 1 billion unique positions, each approximately 20 bytes in size (20 Gigabytes per forecast). Every hour, the forecast data is globally accessed approximately 5 million times (1,400 requests per second), and up to 10 times more during weather events. The forecast data is overwritten every update. Users of the current weather forecast application expect responses to queries to be returned in less than two seconds for each request.

Which design meets the required request rate and response time?

- A. Store forecast locations in an Amazon ES cluster
- B. Use an Amazon CloudFront distribution targeting an Amazon API Gateway endpoint with AWS Lambda functions responding to queries as the origin
- C. Enable API caching on the API Gateway stage with a cache-control timeout set for 15 minutes.
- D. Store forecast locations in an Amazon EFS volume
- E. Create an Amazon CloudFront distribution that targets an Elastic Load Balancing group of an Auto Scaling fleet of Amazon EC2 instances that have mounted the Amazon EFS volume
- F. Set the cache-control timeout for 15 minutes in the CloudFront distribution.
- G. Store forecast locations in an Amazon ES cluster
- H. Use an Amazon CloudFront distribution targeting an API Gateway endpoint with AWS Lambda functions responding to queries as the origin
- I. Create an Amazon Lambda@Edge function that caches the data locally at edge locations for 15 minutes.
- J. Store forecast locations in an Amazon S3 as individual object
- K. Create an Amazon CloudFront distribution targeting an Elastic Load Balancing group of an Auto Scaling fleet of EC2 instances, querying the origin of the S3 object
- L. Set the cache-control timeout for 15 minutes in the CloudFront distribution.

**Answer:** C

**Explanation:**

<https://aws.amazon.com/blogs/networking-and-content-delivery/lambdaedge-design-best-practices/>

**NEW QUESTION 155**

A Solutions Architect is working with a company that is extremely sensitive to its IT costs and wishes to implement controls that will result in a predictable AWS spend each month.

Which combination of steps can help the company control and monitor its monthly AWS usage to achieve a cost that is as close as possible to the target amount? (Choose three.)

- A. Implement an IAM policy that requires users to specify a 'workload' tag for cost allocation when launching Amazon EC2 instances.
- B. Contact AWS Support and ask that they apply limits to the account so that users are not able to launch more than a certain number of instance types.
- C. Purchase all upfront Reserved Instances that cover 100% of the account's expected Amazon EC2 usage.
- D. Place conditions in the users' IAM policies that limit the number of instances they are able to launch.
- E. Define 'workload' as a cost allocation tag in the AWS Billing and Cost Management console.
- F. Set up AWS Budgets to alert and notify when a given workload is expected to exceed a defined cost.

**Answer:** AEF

**NEW QUESTION 159**

A bank is re-architecting its mainframe-based credit card approval processing application to a cloud-native application on the AWS cloud.

The new application will receive up to 1,000 requests per second at peak load. There are multiple steps to each transaction, and each step must receive the result of the previous step. The entire request must return an authorization response within less than 2 seconds with zero data loss. Every request must receive a response. The solution must be Payment Card Industry Data Security Standard (PCI DSS)-compliant.

Which option will meet all of the bank's objectives with the LEAST complexity and LOWEST cost while also meeting compliance requirements?

- A. Create an Amazon API Gateway to process inbound requests using a single AWS Lambda task that performs multiple steps and returns a JSON object with the approval status
- B. Open a support case to increase the limit for the number of concurrent Lambdas to allow room for bursts of activity due to the new application.
- C. Create an Application Load Balancer with an Amazon ECS cluster on Amazon EC2 Dedicated instances in a target group to process incoming request
- D. Use Auto Scaling to scale the cluster out/in based on average CPU utilization
- E. Deploy a web service that processes all of the approval steps and returns a JSON object with the approval status.
- F. Deploy the application on Amazon EC2 on Dedicated Instance
- G. Use an Elastic Load Balancer in front of a farm of application servers in an Auto Scaling group to handle incoming request
- H. Scale out/in based on a custom Amazon CloudWatch metric for the number of inbound requests per second after measuring the capacity of a single instance.
- I. Create an Amazon API Gateway to process inbound requests using a series of AWS Lambda processes, each with an Amazon SQS input queue
- J. As each step completes, it writes its result to the next step's queue
- K. The final step returns a JSON object with the approval status
- L. Open a support case to increase the limit for the number of concurrent Lambdas to allow room for bursts of activity due to the new application.

**Answer:** B

**NEW QUESTION 161**

A financial company is using a high-performance compute cluster running on Amazon EC2 instances to perform market simulations. A DNS record must be created in an Amazon Route 53 private hosted zone when instances start. The DNS record must be removed after instances are terminated.

Currently the company uses a combination of Amazon CloudWatch Events and AWS Lambda to create the DNS record. The solution worked well in testing with small clusters, but in production with clusters containing thousands of instances the company sees the following error in the Lambda logs:

HTTP 400 error (Bad request).

The response header also includes a status code element with a value of "Throttling" and a status message element with a value of "Rate exceeded "

Which combination of steps should the Solutions Architect take to resolve these issues? (Select THREE)

- A. Configure an Amazon SQS FIFO queue and configure a CloudWatch Events rule to use this queue as a target
- B. Remove the Lambda target from the CloudWatch Events rule
- C. Configure an Amazon Kinesis data stream and configure a CloudWatch Events rule to use this queue as a target. Remove the Lambda target from the CloudWatch Events rule
- D. Update the CloudWatch Events rule to trigger on Amazon EC2 "Instance Launch Successful" and "Instance Terminate Successful" events for the Auto Scaling group used by the cluster
- E. Configure a Lambda function to retrieve messages from an Amazon SQS queue. Modify the Lambda function to retrieve a maximum of 10 messages then batch the messages by Amazon Route 53 API call type and submit. Delete the messages from the SQS queue after successful API calls.
- F. Configure an Amazon SQS standard queue and configure the existing CloudWatch Events rule to use this queue as a target. Remove the Lambda target from the CloudWatch Events rule.
- G. Configure a Lambda function to read data from the Amazon Kinesis data stream and configure the batch window to 5 minutes. Modify the function to make a single API call to Amazon Route 53 with all records read from the Kinesis data stream



Answer: BEF

NEW QUESTION 164

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