

## 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 Solutions Architect is building a containerized .NET Core application that will run in AWS Fargate. The backend of the application requires Microsoft SQL Server with high availability. All tiers of the application must be highly available. The credentials used for the connection string to SQL Server should not be stored on disk within the .NET Core front-end containers.

Which strategies should the Solutions Architect use to meet these requirements?

- A. Set up SQL Server to run in Fargate with Service Auto Scaling. Create an Amazon ECS task execution role that allows the Fargate task definition to get the secret value for the credentials to SQL Server running in Fargate. Specify the ARN of the secret in AWS Secrets Manager in the secrets section of the Fargate task definition so the sensitive data can be injected into the containers as environment variables on startup for reading into the application to construct the connection string. Set up the .NET Core service using Service Auto Scaling behind an Application Load Balancer in multiple Availability Zones.
- B. Create a Multi-AZ deployment of SQL Server on Amazon RDS. Create a secret in AWS Secrets Manager for the credentials to the RDS database. Create an Amazon ECS task execution role that allows the Fargate task definition to get the secret value for the credentials to the RDS database in Secrets Manager. Specify the ARN of the secret in Secrets Manager in the secrets section of the Fargate task definition so the sensitive data can be injected into the containers as environment variables on startup for reading into the application to construct the connection string. Set up the .NET Core service in Fargate using Service Auto Scaling behind an Application Load Balancer in multiple Availability Zones.
- C. Create an Auto Scaling group to run SQL Server on Amazon EC2. Create a secret in AWS Secrets Manager for the credentials to SQL Server running on EC2. Create an Amazon ECS task execution role that allows the Fargate task definition to get the secret value for the credentials to SQL Server on EC2. Specify the ARN of the secret in Secrets Manager in the secrets section of the Fargate task definition so the sensitive data can be injected into the containers as environment variables on startup for reading into the application to construct the connection string. Set up the .NET Core service using Service Auto Scaling behind an Application Load Balancer in multiple Availability Zones.
- D. Create a Multi-AZ deployment of SQL Server on Amazon RDS. Create a secret in AWS Secrets Manager for the credentials to the RDS database. Create non-persistent empty storage for the .NET Core containers in the Fargate task definition to store the sensitive information. Create an Amazon ECS task execution role that allows the Fargate task definition to get the secret value for the credentials to the RDS database in Secrets Manager. Specify the ARN of the secret in Secrets Manager in the secrets section of the Fargate task definition so the sensitive data can be written to the non-persistent empty storage on startup for reading into the application to construct the connection.

**Answer: C**

#### NEW QUESTION 3

A large company has many business units. Each business unit has multiple AWS accounts for different purposes. The CIO of the company sees that each business unit has data that would be useful to share with other parts of the company. In total, there are about 10 PB of data that needs to be shared with users in 1,000 AWS accounts. The data is proprietary, so some of it should only be available to users with specific job types. Some of the data is used for throughput of intensive workloads, such as simulations. The number of accounts changes frequently because of new initiatives, acquisitions, and divestitures.

A Solutions Architect has been asked to design a system that will allow for sharing data for use in AWS with all of the employees in the company.

Which approach will allow for secure data sharing in a scalable way?

- A. Store the data in a single Amazon S3 bucket
- B. Create an IAM role for every combination of job type and business unit that allows to appropriate read/write access based on object prefixes in the S3 bucket
- C. The roles should have trust policies that allow the business unit's AWS accounts to assume their role
- D. Use IAM in each business unit's AWS account to prevent them from assuming roles for a different job type
- E. Users get credentials to access the data by using AssumeRole from their business unit's AWS account
- F. Users can then use those credentials with an S3 client.
- G. Store the data in a single Amazon S3 bucket
- H. Write a bucket policy that uses conditions to grant read and write access where appropriate, based on each user's business unit and job type
- I. Determine the business unit with the AWS account accessing the bucket and the job type with a prefix in the IAM user's name
- J. Users can access data by using IAM credentials from their business unit's AWS account with an S3 client.
- K. Store the data in a series of Amazon S3 buckets
- L. Create an application running in Amazon EC2 that is integrated with the company's identity provider (IdP) that authenticates users and allows them to download or upload data through the application
- M. The application uses the business unit and job type information in the IdP to control what users can upload and download through the application
- N. The users can access the data through the application's API.
- O. Store the data in a series of Amazon S3 buckets
- P. Create an AWS STS token vending machine that is integrated with the company's identity provider (IdP). When a user logs in, have the token vending machine attach an IAM policy that assumes the role that limits the user's access and/or upload only the data the user is authorized to access
- Q. Users can get credentials by authenticating to the token vending machine's website or API and then use those credentials with an S3 client.

**Answer: B**

#### NEW QUESTION 4

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 traffic
- B. Open the network ACL and prevent administration from making future changes through IAM.
- C. The fault is in the third-party environment
- D. Contact the third party that provides the maps and request a fix that will provide better uptime.
- E. One NAT instance has become overloaded
- 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 failed
- H. Recommend replacing the EC2 NAT instances with a NAT gateway.

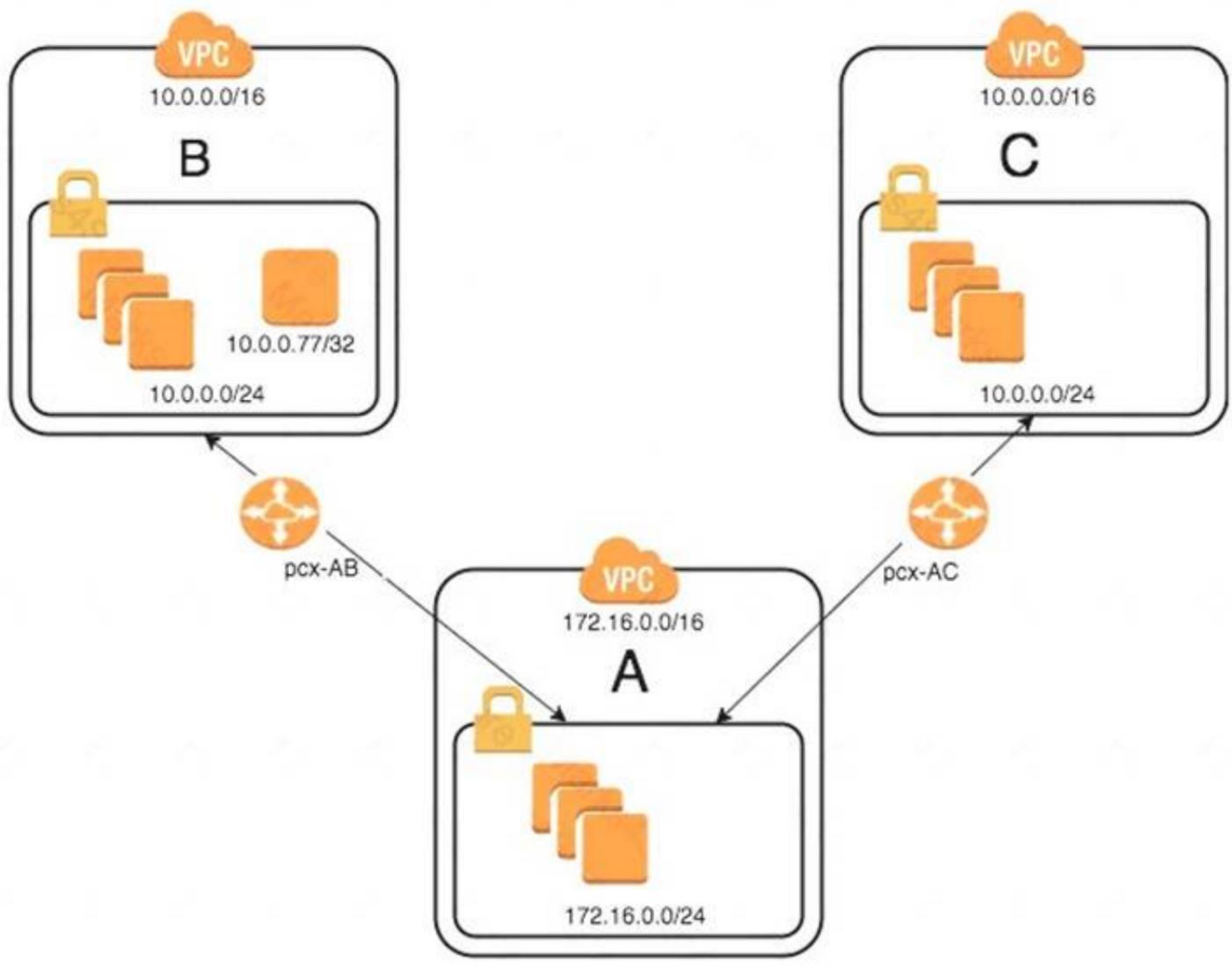
**Answer: D**

**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 5**

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 6**

While debugging a backend application for an IoT system that supports globally distributed devices a Solutions Architect notices that stale data is occasionally being sent to user devices. Devices often share data, and stale data does not cause issues in most cases However device operations are disrupted when a device reads the stale data after an update

The global system has multiple identical application stacks deployed In different AWS Regions If a user device travels out of its home geographic region it will always connect to the geographically closest AWS Region to write or read data The same data is available in all supported AWS Regions using an Amazon DynamoDB global table

What change should be made to avoid causing disruptions in device operations'?

- A. Update the backend to use strongly consistent read
- B. Update the devices to always write to and read from their home AWS Region
- C. Enable strong consistency globally on a DynamoDB global table Update the backend to use strongly consistent reads
- D. Switch the backend data store to Amazon Aurora MySQL with cross-region replicas Update the backend to always write to the master endpoint
- E. Select one AWS Region as a master and perform all writes in that AWS Region only Update the backend to use strongly consistent reads

**Answer: B**

#### NEW QUESTION 7

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/developer-guide/automating-updates-to-serverless>

#### NEW QUESTION 8

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 9

A company runs its containerized batch jobs on Amazon ECS. The jobs are scheduled by submitting a container image, a task definition, and the relevant data to an Amazon S3 bucket. Container images may be unique per job. Running the jobs as quickly as possible is of utmost importance, so submitting job artifacts to the S3 bucket triggers the job to run immediately. Sometimes there may be no jobs running at all. However, jobs of any size can be submitted with no prior warning to the IT Operations team. Job definitions include CPU and memory resource requirements.

What solution will allow the batch jobs to complete as quickly as possible after being scheduled?

- A. Schedule the jobs on an Amazon ECS cluster using the Amazon EC2 launch type
- B. Use Service Auto Scaling to increase or decrease the number of running tasks to suit the number of running jobs.

- C. Schedule the jobs directly on EC2 instance
- D. Use Reserved Instances for the baseline minimum load, and use On-Demand Instances in an Auto Scaling group to scale up the platform based on demand.
- E. Schedule the jobs on an Amazon ECS cluster using the Fargate launch type
- F. Use Service Auto Scaling to increase or decrease the number of running tasks to suit the number of running jobs.
- G. Schedule the jobs on an Amazon ECS cluster using the Fargate launch type
- H. Use Spot Instances in an Auto Scaling group to scale the platform based on demand
- I. Use Service Auto Scaling to increase or decrease the number of running tasks to suit the number of running jobs.

**Answer: C**

#### NEW QUESTION 10

A company has a 24 TB MySQL database in its on-premises data center that grows at the rate of 10 GB per day. The data center is connected to the company's AWS infrastructure with a 50 Mbps VPN connection.

The company is migrating the application and workload to AWS. The application code is already installed and tested on Amazon EC2. The company now needs to migrate the database and wants to go live on AWS within 3 weeks.

Which of the following approaches meets the schedule with LEAST downtime?

- A. 1. Use the VM Import/Export service to import a snapshot on the on-premises database into AWS. 2. Launch a new EC2 instance from the snapshot. 3. Set up ongoing database replication from on-premises to the EC2 database over the VPN. 4. Change the DNS entry to point to the EC2 database. 5. Stop the replication.
- B. 1. Launch an AWS DMS instance. 2. Launch an Amazon RDS Aurora MySQL DB instance. 3. Configure the AWS DMS instance with on-premises and Amazon RDS database information. 4. Start the replication task within AWS DMS over the VPN. 5. Change the DNS entry to point to the Amazon RDS MySQL database. 6. Stop the replication.
- C. 1. Create a database export locally using database-native tools. 2. Import that into AWS using AWS Snowball. 3. Launch an Amazon RDS Aurora DB instance. 4. Load the data in the RDS Aurora DB instance from the export. 5. Set up database replication from the on-premises database to the RDS Aurora DB instance over the VPN. 6. Change the DNS entry to point to the RDS Aurora DB instance. 7. Stop the replication.
- D. 1. Take the on-premises application offline. 2. Create a database export locally using database-native tools. 3. Import that into AWS using AWS Snowball. 4. Launch an Amazon RDS Aurora DB instance. 5. Load the data in the RDS Aurora DB instance from the export. 6. Change the DNS entry to point to the Amazon RDS Aurora DB instance. 7. Put the Amazon EC2 hosted application online.

**Answer: C**

#### NEW QUESTION 10

A company is operating a large customer service call center, and stores and processes call recordings with a custom application. Approximately 2% of the call recordings are transcribed by an offshore team for quality assurance purposes. These recordings take days. The company uses Linux servers for processing the call recording and managing the transcription queue. There is also a web application for the quality assurance staff to review and score call recordings.

The company plans to migrate the system to AWS to reduce storage costs and the time required to transcribe calls.

Which set of actions should be taken to meet the company's objectives?

- A. Upload the call recording to Amazon S3 from the call center
- B. Set up an S3 lifecycle policy to move the call recordings to Amazon S3 Glacier after 90 days
- C. Use an AWS Lambda trigger to transcribe the call recordings with Amazon Transcribe
- D. Use Amazon S3, Amazon API Gateway and Lambda to host the review and scoring application.
- E. Upload the call recordings to Amazon S3 from the call center
- F. Set up an S3 lifecycle policy to move the call recordings to Amazon S3 Glacier after 90 days
- G. Use an AWS Lambda trigger to transcribe the call recordings with Amazon Mechanical Turk
- H. Use Amazon EC2 instances in an Auto Scaling group behind an Application Balancer to host the review and scoring application.
- I. Use Amazon EC2 instances in an Auto Scaling group behind an Application Load Balancer to host the review and scoring application
- J. Upload the call recordings to this application from the call center and store them on an Amazon EFS mount point
- K. Use AWS Backup to archive the call recording after 90 days
- L. Transcribe the call recordings with Amazon Transcribe.
- M. Upload the call recording to Amazon S3 from the call center and put the object key in an Amazon SQS queue
- N. Set up an S3 lifecycle policy to move the call recordings to Amazon S3 Glacier after 90 days
- O. Use Amazon EC2 instances in the queue as the scaling metric
- P. Use Amazon S3, Amazon API Gateway, and AWS Lambda to host the review and scoring application.

**Answer: B**

#### NEW QUESTION 15

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 19

A company has an existing on-premises three-tier web application. The Linux web servers serve content from a centralized file share on a NAS server because the content is refreshed several times a day from various sources. The existing infrastructure is not optimized and the company would like to move to AWS in order to gain the ability to scale resources up and down in response to load. On-premises and AWS resources are connected using AWS Direct Connect.

How can the company migrate the web infrastructure to AWS without delaying the content refresh process?

- A. Create a cluster of web server Amazon EC2 instances behind a Classic Load Balancer on AW
- B. Share an Amazon EBS volume among all instances for the conten
- C. Schedule a periodic synchronization of this volume and the NAS server.
- D. Create an on-premises file gateway using AWS Storage Gateway to replace the NAS server and replicate content to AW
- E. On the AWS side, mount the same Storage Gateway bucket to each web server Amazon EC2 instance to serve the content.
- F. Expose an Amazon EFS share to on-premises users to serve as the NAS serv
- G. Mount the same EFS share to the web server Amazon EC2 instances to serve the content.
- H. Create web server Amazon EC2 instances on AWS in an Auto Scaling grou
- I. Configure a nightly process where the web server instances are updated from the NAS server.

**Answer: C**

**Explanation:**

File gateway is limited by performance its gateway instance, whether EC2 or On-premises, Cache will get filled up fast if not properly configured, For large number of EC2 instances EFS scales better. So, bottom line is File Storage gateway is for legacy applications and you have to add cost of large gateway instances before comparing it to same quantity of EFS storage. [https://www.reddit.com/r/aws/comments/82pyop/storage\\_gateway\\_vs\\_efs/](https://www.reddit.com/r/aws/comments/82pyop/storage_gateway_vs_efs/)  
<https://docs.aws.amazon.com/efs/latest/ug/efs-onpremises.html>

**NEW QUESTION 21**

A company is running an email application across multiple AWS Regions. The company uses Ohio (us-east-2) as the primary Region and Northern Virginia (us-east-1) as the Disaster Recovery (DR) Region. The data is continuously replicated from the primary Region to the DR Region by a single instance on the public subnet in both Regions. The replication messages between the Regions have a significant backlog during certain times of the day. The backlog clears on its own after a short time, but it affects the application's RPO.

Which of the following solutions should help remediate this performance problem? (Select TWO)

- A. Increase the size of the instances.
- B. Have the instance in the primary Region write the data to an Amazon SQS queue in the primary Region instead, and have the instance in the DR Region poll from this queue.
- C. Use multiple instances on the primary and DR Regions to send and receive the replication data.
- D. Change the DR Region to Oregon (us-west-2) instead of the current DR Region.
- E. Attach an additional elastic network interface to each of the instances in both Regions and set up load balancing between the network interfaces.

**Answer: AC**

**NEW QUESTION 26**

A bank is designing an online customer service portal where customers can chat with customer service agents. The portal is required to maintain a 15-minute RPO or RTO in case of a regional disaster. Banking regulations require that all customer service chat transcripts must be preserved on durable storage for at least 7 years, chat conversations must be encrypted in-flight, and transcripts must be encrypted at rest. The Data Lost Prevention team requires that data at rest must be encrypted using a key that the team controls, rotates, and revokes.

Which design meets these requirements?

- A. The chat application logs each chat message into Amazon CloudWatch Log
- B. A scheduled AWS Lambda function invokes a CloudWatch Log
- C. CreateExportTask every 5 minutes to export chat transcripts to Amazon S3. The S3 bucket is configured for cross-region replication to the backup regio
- D. Separate AWS KMS keys are specified for the CloudWatch Logs group and the S3 bucket.
- E. The chat application logs each chat message into two different Amazon CloudWatch Logs groups in two different regions, with the same AWS KMS key applie
- F. Both CloudWatch Logs groups are configured to export logs into an Amazon Glacier vault with a 7-year vault lock policy with a KMS key specified.
- G. The chat application logs each chat message into Amazon CloudWatch Log
- H. A subscription filter on the CloudWatch Logs group feeds into an Amazon Kinesis Data Firehose which streams the chat messages into an Amazon S3 bucket in the backup regio
- I. Separate AWS KMS keys are specified for the CloudWatch Logs group and the Kinesis Data Firehose.
- J. The chat application logs each chat message into Amazon CloudWatch Log
- K. The CloudWatch Logs group is configured to export logs into an Amazon Glacier vault with a 7-year vault lock polic
- L. Glacier cross-region replication mirrors chat archives to the backup regio
- M. Separate AWS KMS keys are specified for the CloudWatch Logs group and the Amazon Glacier vault.

**Answer: B**

**NEW QUESTION 29**

A company runs a public-facing application that uses a Java-based web service via a RESTful API. It is hosted on Apache Tomcat on a single server in a data center that runs consistently at 30% CPU utilization. Use of the API is expected to increase by 10 times with a new product launch. The business wants to migrate the application to AWS with no disruption and needs it to scale to meet demand.

The company has already decided to use Amazon Route 53 and CNAME records to redirect traffic. How can these requirements be met with the LEAST amount of effort?

- A. Use AWS Elastic Beanstalk to deploy the Java web service and enable Auto Scaling. Then switch the application to use the new web service.
- B. Lift and shift the Apache server to the cloud using AWS SMS. Then switch the application to direct web service traffic to the new instance.
- C. Create a Docker image and migrate the image to Amazon ECS. Then change the application code to direct web service queries to the ECS container.
- D. Modify the application to call the web service via Amazon API Gateway. Then create a new AWS Lambda Java function to run the Java web service code. After testing, change API Gateway to use the Lambda function.

**Answer: A**

**NEW QUESTION 32**

A company is running a .NET three-tier web application on AWS. The team currently uses XL storage optimized instances to store and serve the website's image and video files on local instance storage. The company has encountered issues with data loss from replication and instance failures. The Solutions Architect has been asked to redesign this application to improve its reliability while keeping costs low.

Which solution will meet these requirements?

- A. Set up a new Amazon EFS share, move all image and video files to this share, and then attach this new drive as a mount point to all existing server
- B. Create an Elastic Load Balancer with Auto Scaling general purpose instance
- C. Enable Amazon CloudFront to the Elastic Load Balance
- D. Enable Cost Explorer and use AWS Trusted advisor checks to continue monitoring the environment for future savings.
- E. Implement Auto Scaling with general purpose instance types and an Elastic Load Balance
- F. Enable an Amazon CloudFront distribution to Amazon S3 and move images and video files to Amazon S3. Reserve general purpose instances to meet base performance requirement
- G. Use Cost Explorer and AWSTrusted Advisor checks to continue monitoring the environment for future savings.
- H. Move the entire website to Amazon S3 using the S3 website hosting featur
- I. Remove all the web servers and have Amazon S3 communicate directly with the application servers in Amazon VPC.
- J. Use AWS Elastic Beanstalk to deploy the .NET applicatio
- K. Move all images and video files to Amazon EF
- L. Create an Amazon CloudFront distribution that points to the EFS shar
- M. Reserve the m4.4xl instances needed to meet base performance requirements.

**Answer: B**

#### NEW QUESTION 37

A three-tier web application runs on Amazon EC2 instances. Cron daemons are used to trigger scripts that collect the web server, application, and database logs and send them to a centralized location every hour. Occasionally, scaling events or unplanned outages have caused the instances to stop before the latest logs were collected, and the log files were lost.

Which of the following options is the MOST reliable way of collecting and preserving the log files?

- A. Update the cron jobs to run every 5 minutes instead of every hour to reduce the possibility of log messages being lost in an outage.
- B. Use Amazon CloudWatch Events to trigger Amazon Systems Manager Run Command to invoke the log collection scripts more frequently to reduce the possibility of log messages being lost in an outage.
- C. Use the Amazon CloudWatch Logs agent to stream log messages directly to CloudWatch Logs. Configure the agent with a batch count of 1 to reduce the possibility of log messages being lost in an outage.
- D. Use Amazon CloudWatch Events to trigger AWS Lambda to SSH into each running instance and invoke the log collection scripts more frequently to reduce the possibility of log messages being lost in an outage.

**Answer: C**

#### Explanation:

<https://docs.aws.amazon.com/AmazonCloudWatch/latest/logs/AgentReference.html>

#### NEW QUESTION 42

A company runs a three-tier application in AWS. Users report that the application performance can vary greatly depending on the time of day and functionality being accessed.

The application includes the following components:

- Eight t2.large front-end web servers that serve static content and proxy dynamic content from the application tier.
- Four t2.large application servers.
- One db.m4.large Amazon RDS MySQL Multi-AZ DB instance.

Operations has determined that the web and application tiers are network constrained.

Which of the following should cost effective improve application performance? (Choose two.)

- A. Replace web and app tiers with t2.xlarge instances
- B. Use AWS Auto Scaling and m4.large instances for the web and application tiers
- C. Convert the MySQL RDS instance to a self-managed MySQL cluster on Amazon EC2
- D. Create an Amazon CloudFront distribution to cache content
- E. Increase the size of the Amazon RDS instance to db.m4.xlarge

**Answer: BD**

#### Explanation:

<https://aws.amazon.com/ec2/instance-types/>

#### NEW QUESTION 47

A company has multiple AWS accounts hosting IT applications. An Amazon CloudWatch Logs agent is installed on all Amazon EC2 instances. The company wants to aggregate all security events in a centralized AWS account dedicated to log storage.

Security Administrators need to perform near-real-time gathering and correlating of events across multiple AWS accounts.

Which solution satisfies these requirements?

- A. Create a Log Audit IAM role in each application AWS account with permissions to view CloudWatch Logs, configure an AWS Lambda function to assume the Log Audit role, and perform an hourly export of CloudWatch Logs data to an Amazon S3 bucket in the logging AWS account.
- B. Configure CloudWatch Logs streams in each application AWS account to forward events to CloudWatch Logs in the logging AWS account
- C. In the logging AWS account, subscribe an Amazon Kinesis Data Firehose stream to Amazon CloudWatch Events, and use the stream to persist log data in Amazon S3.
- D. Create Amazon Kinesis Data Streams in the logging account, subscribe the stream to CloudWatch Logs streams in each application AWS account, configure an Amazon Kinesis Data Firehose delivery stream with the Data Streams as its source, and persist the log data in an Amazon S3 bucket inside the logging AWS account.
- E. Configure CloudWatch Logs agents to publish data to an Amazon Kinesis Data Firehose stream in the logging AWS account, use an AWS Lambda function to read messages from the stream and push messages to Data Firehose, and persist the data in Amazon S3.

**Answer: C**

**Explanation:**

The solution uses Amazon Kinesis Data Streams and a log destination to set up an endpoint in the logging account to receive streamed logs and uses Amazon Kinesis Data Firehose to deliver log data to the Amazon Simple Storage Solution (S3) bucket. Application accounts will subscribe to stream all (or part) of their Amazon CloudWatch logs to a defined destination in the logging account via subscription filters. <https://aws.amazon.com/blogs/architecture/central-logging-in-multi-account-environments/>

**NEW QUESTION 48**

A company stores sales transaction data in Amazon DynamoDB tables. To detect anomalous behaviors and respond quickly, all changes to the items stored in the DynamoDB tables must be logged within 30 minutes. Which solution meets the requirements?

- A. Copy the DynamoDB tables into Apache Hive tables on Amazon EMR every hour and analyze them for anomalous behavior
- B. Send Amazon SNS notifications when anomalous behaviors are detected.
- C. Use AWS CloudTrail to capture all the APIs that change the DynamoDB table
- D. Send SNS notifications when anomalous behaviors are detected using CloudTrail event filtering.
- E. Use Amazon DynamoDB Streams to capture and send updates to AWS Lambda
- F. Create a Lambda function to output records to Amazon Kinesis Data Stream
- G. Analyze any anomalies with Amazon Kinesis Data Analytic
- H. Send SNS notifications when anomalous behaviors are detected.
- I. Use event patterns in Amazon CloudWatch Events to capture DynamoDB API call events with an AWS Lambda function as a target to analyze behavior
- J. Send SNS notifications when anomalous behaviors are detected.

**Answer:** C

**Explanation:**

<https://docs.aws.amazon.com/amazondynamodb/latest/developerguide/Streams.html>

**NEW QUESTION 49**

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 53**

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 routing
- 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 region
- 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 region
- 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 layer
- I. Use Amazon DynamoDB global tables as the data layer with Amazon DynamoDB Accelerator (DAX) for caching.
- J. Use Amazon Route 53 geolocation-based routing
- 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 region
- 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 55**

A retail company has a custom .NET web application running on AWS that uses Microsoft SQL Server for the database. The application servers maintain a user's session locally.

Which combination of architecture changes are needed ensure all tiers of the solution are highly available? (Select THREE.)

- A. Refactor the application to store the user's session in Amazon ElastiCache Use Application Load Balancers to distribute the load between application instances
- B. Set up the database to generate hourly snapshots using Amazon EBS Configure an Amazon CloudWatch Events rule to launch a new database instance if the primary one fails
- C. Migrate the database to Amazon RDS for SQL Server Configure the RDS instance to use a Multi-AZ deployment
- D. Move the NET content to an Amazon S3 bucket Configure the bucket for static website hosting
- E. Put the application instances in an Auto Scaling group Configure the Auto Scaling group to create new instances if an instance becomes unhealthy
- F. Deploy Amazon CloudFront in front of the application tier Configure CloudFront to serve content from healthy application instances only

**Answer:** BDE

#### NEW QUESTION 58

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 sharing
- 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 sharing
- 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 63

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 storage
- C. Copy the site contents to the volumes at launch and to Amazon S3 at shutdown.
- D. Configure an Amazon CloudFront distribution
- 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 site contents, and point the distribution at the ALB.

**Answer:** C

#### Explanation:

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

#### NEW QUESTION 64

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 69

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 70**

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 73**

A company wants to allow its Marketing team to perform SQL queries on customer records to identify market segments. The data is spread across hundreds of files. The records must be encrypted in transit and at rest. The Team Manager must have the ability to manage users and groups, but no team members should have access to services or resources not required for the SQL queries. Additionally, Administrators need to audit the queries made and receive notifications when a query violates rules defined by the Security team.

AWS Organizations has been used to create a new account and an AWS IAM user with administrator permissions for the Team Manager.

Which design meets these requirements?

- A. Apply a service control policy (SCP) that allows access to IAM, Amazon RDS, and AWS CloudTrail. Load customer records in Amazon RDS MySQL and train users to execute queries using the AWS CLI
- B. Stream the query logs to Amazon CloudWatch Logs from the RDS database instance
- C. Use a subscription filter with AWS Lambda functions to audit and alarm on queries against personal data.
- D. Apply a service control policy (SCP) that denies access to all services except IAM, Amazon Athena, Amazon S3, and AWS CloudTrail
- E. Store customer record files in Amazon S3 and train users to execute queries using the CLI via Athena
- F. Analyze CloudTrail events to audit and alarm on queries against personal data.
- G. Apply a service control policy (SCP) that denies access to all services except IAM, Amazon DynamoDB, and AWS CloudTrail
- H. Store customer records in DynamoDB and train users to execute queries using the AWS CLI
- I. Enable DynamoDB streams to track the queries that are issued and use an AWS Lambda function for real-time monitoring and alerting.
- J. Apply a service control policy (SCP) that allows access to IAM, Amazon Athena, Amazon S3, and AWS CloudTrail
- K. Store customer records as files in Amazon S3 and train users to leverage the Amazon S3 Select feature and execute queries using the AWS CLI
- L. Enable S3 object-level logging and analyze CloudTrail events to audit and alarm on queries against personal data.

**Answer: D**

**NEW QUESTION 75**

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 instructions
- 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 80**

The Solutions Architect manages a serverless application that consists of multiple API gateways, AWS Lambda functions, Amazon S3 buckets, and Amazon DynamoDB tables. Customers say that a few application components slow while loading dynamic images, and some are timing out with the "504 Gateway Timeout" error. While troubleshooting the scenario, the Solutions Architect confirms that DynamoDB monitoring metrics are at acceptable levels.

Which of the following steps would be optimal for debugging these application issues? (Choose two.)

- A. Parse HTTP logs in Amazon API Gateway for HTTP errors to determine the root cause of the errors.
- B. Parse Amazon CloudWatch Logs to determine processing times for requested images at specified intervals.
- C. Parse VPC Flow Logs to determine if there is packet loss between the Lambda function and S3.
- D. Parse AWS X-Ray traces and analyze HTTP methods to determine the root cause of the HTTP errors.
- E. Parse S3 access logs to determine if objects being accessed are from specific IP addresses to narrow the scope to geographic latency issues.

**Answer:** BD

**Explanation:**

Firstly "A 504 Gateway Timeout Error means your web server didn't receive a timely response from another server upstream when it attempted to load one of your web pages. Put simply, your web servers aren't communicating with each other fast enough". This specific issue is addressed in the AWS article "Tracing, Logging and Monitoring an API Gateway API". [https://docs.amazonaws.cn/en\\_us/apigateway/latest/developerguide/monitoring\\_overview.html](https://docs.amazonaws.cn/en_us/apigateway/latest/developerguide/monitoring_overview.html)

**NEW QUESTION 85**

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 internal 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.htm> | (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 86**

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 89**

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 90

A company has several teams, and each team has their own Amazon RDS database that totals 100 TB. The company is building a data query platform for Business Intelligence Analysts to generate a weekly business report. The new system must run ad-hoc SQL queries. What is the MOST cost-effective solution?

- A. Create a new Amazon Redshift cluster. Create an AWS Glue ETL job to copy data from the RDS databases to the Amazon Redshift cluster. Use Amazon Redshift to run the query.
- B. Create an Amazon EMR cluster with enough core nodes. Run an Apache Spark job to copy data from the RDS databases to an Hadoop Distributed File System (HDFS). Use a local Apache Hive metastore to maintain the table definition. Use Spark SQL to run the query.
- C. Use an AWS Glue ETL job to copy all the RDS databases to a single Amazon Aurora PostgreSQL database. Run SQL queries on the Aurora PostgreSQL database.
- D. Use an AWS Glue crawler to crawl all the databases and create tables in the AWS Glue Data Catalog. Use an AWS Glue ETL Job to load data from the RDS databases to Amazon S3, and use Amazon Athena to run the queries.

**Answer: C**

#### NEW QUESTION 94

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 98

A company has more than 100 AWS accounts, with one VPC per account, that need outbound HTTPS connectivity to the internet. The current design contains one NAT gateway per Availability Zone (AZ) in each VPC. To reduce costs and obtain information about outbound traffic, management has asked for a new architecture for internet access.

Which solution will meet the current needs, and continue to grow as new accounts are provisioned, while reducing costs?

- A. Create a transit VPC across two AZs using a third-party routing appliance.
- B. Create a VPN connection to each VPC.
- C. Default route internet traffic to the transit VPC.
- D. Create multiple hosted-private AWS Direct Connect VIFs, one per account, each with a Direct Connect gateway.
- E. Default route internet traffic back to an on-premises router to route to the internet.
- F. Create a central VPC for outbound internet traffic.
- G. Use VPC peering to default route to a set of redundant NAT gateway in the central VPC.
- H. Create a proxy fleet in a central VPC account.
- I. Create an AWS PrivateLink endpoint service in the central VPC.
- J. Use PrivateLink interface for internet connectivity through the proxy fleet.

**Answer: D**

#### Explanation:

user proxy fleet over PrivateLink. As explained in this AWS website:

<https://aws.amazon.com/blogs/networking-and-content-delivery/how-to-use-aws-privatelink-to-secure-and-scale>

#### NEW QUESTION 102

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 identify 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 103

A company has a website that enables users to upload videos. Company policy states the uploaded videos must be analyzed for restricted content. An uploaded video is placed in Amazon S3, and a message is pushed to an Amazon SQS queue with the video's location. A backend application pulls this location from Amazon SQS and analyzes the video.

The video analysis is compute-intensive and occurs sporadically during the day. The website scales with demand. The video analysis application runs on a fixed number of instances. Peak demand occurs during the holidays, so the company must add instances to the application during this time. All instances used are currently on-demand Amazon EC2 T2 instances. The company wants to reduce the cost of the current solution.

Which of the following solutions is MOST cost-effective?

- A. Keep the website on T2 instances. Determine the minimum number of website instances required during off-peak times and use Spot Instances to cover them while using Reserved Instances to cover peak demand. Use Amazon EC2 R4 and Amazon EC2 R5 Reserved Instances in an Auto Scaling group for the video analysis application.
- B. Keep the website on 12 instances. Determine the minimum number of website instances required during off-peak times and use Reserved Instances to cover them while using On-Demand Instances to cover peak demand. Use Spot Fleet for the video analysis application comprised of Amazon EC2 C4 and Amazon EC2 C5 Spot Instances.
- C. Migrate the website to AWS Elastic Beanstalk and Amazon EC2 C4 instances. Determine the minimum number of website instances required during off-peak times and use On-Demand instances to cover them while using Spot capacity to cover peak demand. Use Spot Fleet for the video analysis application comprised of C4 and Amazon EC2 C5 instances.
- D. Migrate the website to AWS Elastic Beanstalk and Amazon EC2 R4 instances. Determine the minimum number of website instances required during off-peak times and use Reserved Instances to cover them while using On-Demand Instances to cover peak demand. Use Spot Fleet for the video analysis application comprised of R4 and Amazon EC2 R5 instances.

**Answer:** B

#### NEW QUESTION 105

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 migration.
- B. Use AWS DMS to analyze the current schema and provide a recommendation for the optimal database engine.
- 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 migration.
- F. Use AWS DMS to begin moving data from the on-premises database to AWS.
- G. After the initial copy, continue to use AWS DMS to keep the databases in sync until cutting over to the new databases.
- 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 RDS.
- J. Then, use AWS DMS to migrate to the platform.
- 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 AWS.
- M. After the initial copy, continue to use AWS DMS to keep the databases in sync until cutting over to the new databases.
- 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 108

A company plans to move regulated and security-sensitive businesses to AWS. The Security team is developing a framework to validate the adoption of AWS best practice and industry-recognized compliance standards. The AWS Management Console is the preferred method for teams to provision resources.

Which strategies should a Solutions Architect use to meet the business requirements and continuously assess, audit, and monitor the configurations of AWS resources? (Choose two.)

- A. Use AWS Config rules to periodically audit changes to AWS resources and monitor the compliance of the configurations.
- B. Develop AWS Config custom rules using AWS Lambda to establish a test-driven development approach, and further automate the evaluation of configuration changes against the required controls.
- C. Use Amazon CloudWatch Logs agent to collect all the AWS SDK logs.
- D. Search the log data using a pre-defined set of filter patterns that machines mutating API calls.
- E. Send notifications using Amazon CloudWatch alarms when unintended changes are performed.
- F. Archive log data by using a batch export to Amazon S3 and then Amazon Glacier for a long-term retention and auditability.
- G. Use AWS CloudTrail events to assess management activities of all AWS accounts.
- H. Ensure that CloudTrail is enabled in all accounts and available AWS services.
- I. Enable trails, encrypt CloudTrail event log files with an AWS KMS key, and monitor recorded activities with CloudWatch Logs.
- J. Use the Amazon CloudWatch Events near-real-time capabilities to monitor system events patterns, and trigger AWS Lambda functions to automatically revert non-authorized changes in AWS resources.
- K. Also, target Amazon SNS topics to enable notifications and improve the response time of incident responses.
- L. Use CloudTrail integration with Amazon SNS to automatically notify unauthorized API activities. Ensure that CloudTrail is enabled in all accounts and available AWS services.
- M. Evaluate the usage of Lambda functions to automatically revert non-authorized changes in AWS resources.

**Answer:** AC

**Explanation:**

<https://docs.aws.amazon.com/awscloudtrail/latest/userguide/cloudwatch-alarms-for-cloudtrail.html>  
[https://docs.aws.amazon.com/en\\_pv/awscloudtrail/latest/userguide/best-practices-security.html](https://docs.aws.amazon.com/en_pv/awscloudtrail/latest/userguide/best-practices-security.html)

**NEW QUESTION 110**

The CISO of a large enterprise with multiple IT departments, each with its own AWS account, wants one central place where AWS permissions for users can be managed and users authentication credentials can be synchronized with the company's existing on-premises solution. Which solution will meet the CISO's requirements?

- A. Define AWS IAM roles based on the functional responsibilities of the users in a central account
- B. Create a SAML-based identity management provider
- C. Map users in the on-premises groups to IAM role
- D. Establish trust relationships between the other accounts and the central account.
- E. Deploy a common set of AWS IAM users, groups, roles, and policies in all of the AWS accounts using AWS Organization
- F. Implement federation between the on-premises identity provider and the AWS accounts.
- G. Use AWS Organizations in a centralized account to define service control policies (SCPs). Create a SAML-based identity management provider in each account and map users in the on-premises groups to AWS IAM roles.
- H. Perform a thorough analysis of the user base and create AWS IAM users accounts that have the necessary permission
- I. Set up a process to provision and de provision accounts based on data in the on-premises solution.

**Answer:** A

**Explanation:**

[https://docs.aws.amazon.com/IAM/latest/UserGuide/tutorial\\_cross-account-with-roles.html](https://docs.aws.amazon.com/IAM/latest/UserGuide/tutorial_cross-account-with-roles.html)

**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 needs to run a software package that has a license that must be run on the same physical host for the duration of its use. The software package is only going to be used for 90 days. The company requires patching and restarting of all instances every 30 days.

How can these requirements be met using AWS?

- A. Run a dedicated instance with auto-placement disabled.
- B. Run the instance on a dedicated host with Host Affinity set to Host.
- C. Run an On-Demand instance with a Reserved Instance to ensure consistent placement.
- D. Run the instance on a licensed host with termination set for 90 days.

**Answer:** B

**Explanation:**

<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/how-dedicated-hosts-work.html>

**NEW QUESTION 117**

To abide by industry regulations, a Solutions Architect must design a solution that will store a company's critical data in multiple public AWS Regions, including in the United States, where the company's headquarters is located. The Solutions Architect is required to provide access to the data stored in AWS to the company's global WAN network. The Security team mandates that no traffic accessing this data should traverse the public internet.

How should the Solutions Architect design a highly available solution that meets the requirements and is cost-effective?

- A. Establish AWS Direct Connect connections from the company headquarters to all AWS Regions in use. Use the company WAN to send traffic over to the headquarters and then to the respective DX connection to access the data.
- B. Establish two AWS Direct Connect connections from the company headquarters to an AWS Region. Use the company WAN to send traffic over a DX connection to access the data.
- C. Use inter-region VPC peering to access the data in other AWS Regions.
- D. Establish two AWS Direct Connect connections from the company headquarters to an AWS Region. Use the company WAN to send traffic over a DX connection to access the data.
- E. Use an AWS transit VPC solution to access data in other AWS Regions.
- F. Establish two AWS Direct Connect connections from the company headquarters to an AWS Region. Use the company WAN to send traffic over a DX connection to access the data.
- G. Use Direct Connect Gateway to access data in other AWS Regions.

**Answer:** D

**Explanation:**

<https://aws.amazon.com/blogs/aws/new-aws-direct-connect-gateway-inter-region-vpc-access/>

**NEW QUESTION 120**

A retail company is running an application that stores invoice files in Amazon S3 bucket and metadata about the files in an Amazon. The S3 bucket and DynamoDB table are in us-east-1. The company wants to protect itself from data corruption and loss of connectivity to either Region. Which option meets these requirements?

- A. Create a DynamoDB global table to replicate data between us-east-1 and eu-west-1. Enable continuous backup on the DynamoDB table in us-east-1. Enable versioning on the S3 bucket.
- B. Create an AWS Lambda function triggered by Amazon CloudWatch Events to make regular backups of the DynamoDB tabl
- C. Set up S3 cross-region replication from us-east-1 to eu-west-1. Set up MFA delete on the S3 bucket in us-east-1.
- D. Create a DynamoDB global table to replicate data between us-east-1 and eu-west-1. Enable versioning on the S3 bucke
- E. Implement strict ACLs on the S3 bucket.
- F. Create a DynamoDB global table to replicate data between us-east-1 and eu-west-1. Enable continuous backup on the DynamoDB table in us-east-1. Set up S3 cross-region replication from us-east-1 to eu-west-1.

**Answer:** A

**Explanation:**

<https://aws.amazon.com/blogs/aws/new-cross-region-replication-for-amazon-s3/>

**NEW QUESTION 121**

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 step
- 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 Turk
- 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 125**

A company is migrating its on-premises build artifact server to an AWS solution. The current system consists of an Apache HTTP server that serves artifacts to clients on the local network, restricted by the perimeter firewall. The artifact consumers are largely build automation scripts that download artifacts via anonymous HTTP, which the company will be unable to modify within its migration timetable.

The company decides to move the solution to Amazon S3 static website hosting. The artifact consumers will be migrated to Amazon EC2 instances located within both public and private subnets in a virtual private cloud (VPC).

Which solution will permit the artifact consumers to download artifacts without modifying the existing automation scripts?

- A. Create a NAT gateway within a public subnet of the VPC
- B. Add a default route pointing to the NAT gateway into the route table associated with the subnets containing consumer
- C. Configure the bucket policy to allow the s3:ListBucket and s3:GetObject actions using the condition IpAddress and the condition key aws:SourceIp matching the elastic IP address if the NAT gateway.
- D. Create a VPC endpoint and add it to the route table associated with subnets containing consumers. Configure the bucket policy to allow s3:ListBucket and s3:GetObject actions using the condition StringEquals and the condition key aws:sourceVpce matching the identification of the VPC endpoint.
- E. Create an IAM role and instance profile for Amazon EC2 and attach it to the instances that consume build artifact
- F. Configure the bucket policy to allow the s3:ListBucket and s3:GetObjects actions for the principal matching the IAM role created.
- G. Create a VPC endpoint and add it to the route table associated with subnets containing consumers. Configure the bucket policy to allow s3:ListBucket and s3:GetObject actions using the condition IpAddress and the condition key aws:SourceIp matching the VPC CIDR block.

**Answer:** B

**NEW QUESTION 129**

A financial services company is moving to AWS and wants to enable Developers to experiment and innovate while preventing access to production applications. The company has the following requirements

- Production workloads cannot be directly connected to the internet
- All workloads must be restricted to the us-west-2 and eu-central-1 Regions

• Notification should be sent when Developer sandboxes exceed \$500 in AWS spending monthly  
 Which combination of actions needs to be taken to create a multi-account structure that meets the company's requirements'? (Select THREE )

- A. Create accounts for each production workload within an organization in AWS Organizations Place the production accounts within an organizational unit (OU) For each account delete the default VPC Create an SCP with a Deny rule for the attach an internet gateway and create a default VPC actions Attach the SCP to the OU for the production accounts
- B. Create accounts for each production workload within an organization in AWS Organizations Place the production accounts within an organizational unit (OU) Create an SCP with a Deny rule on the attach an internet gateway action Create an SCP with a Deny rule to prevent use of the default VPC Attach the SCPs to the OU for the production accounts
- C. Create a SCP containing a Deny Effect for cloudfront". lam:\*, route53\* and support\* with a StringNotEquals condition on an aws RequestedRegion condition key with us-west-2 and eu-central-1 values Attach the SCP to the organization's root.
- D. Create an IAM permission boundary containing a Deny Effect for cloudfront'. lam \* route53' and support" with a StringNotEquals condition on an aws RequestedRegion condition key with us-west 2 and eu-central-1 values Attach the permission boundary to an IAM group containing the development and production users.
- E. Create accounts for each development workload within an organization m AWS Organizations Place the development accounts within an organizational unit (OU) Create a custom AWS Config rule to deactivate all (AM users when an account's monthly bill exceeds \$500.
- F. Create accounts for each development workload within an organization in AWS Organizations Place the development accounts within an organizational unit (OU) Create a budget within AWS Budgets for each development account to monitor and report on monthly spending exceeding \$500.

**Answer:** ABD

### NEW QUESTION 132

A company is running a high-user-volume media-sharing application on premises It currently hosts about 400 TB of data with millions of video files The company is migrating this application to AWS to improve reliability and reduce costs  
 The Solutions Architecture team plans to store the videos in an Amazon S3 bucket and use Amazon CloudFront to distribute videos to users. The company needs to migrate this application to AWS within 10 days with the least amount of downtime possible. The company currently has 1 Gbps connectivity to the internet with 30 percent free capacity  
 Which of the following solutions would enable the company to migrate the workload to AWS and meet an of the requirements?

- A. Use a multipart upload in Amazon S3 client at to parallel-upload the data to the Amazon S3 bucket over the internet Use the throttling feature to ensure that the Amazon S3 client does not use more than 30 percent of available internet capacity
- B. Request an AWS Snowmobile with 1 PB capacity to be delivered to the data center Load the data into Snowmobile and send it back to have AWS download that data to the Amazon S3 bucket Sync the new data that was generated while migration was in flight
- C. Use an Amazon S3 client to transfer data from the data center to the Amazon S3 bucket over the internet Use the throttling feature to ensure the Amazon S3 client does not use more than 30 percent of available internet capacity
- D. Request multiple AWS Snowball devices to be delivered to the data center Load the data concurrently into these devices and send it back Have AWS download that data to the Amazon S3 bucket Sync the new data that was generated while migration was in flight.

**Answer:** D

#### Explanation:

<https://www.edureka.co/blog/aws-snowball-and-snowmobile-tutorial/>

### NEW QUESTION 134

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 138

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 accoun
- 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 hierarch

- 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 140

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>
- D: <https://aws.amazon.com/blogs/compute/robust-serverless-application-design-with-aws-lambda-dlq/c>

#### NEW QUESTION 145

A company has a data center that must be migrated to AWS as quickly as possible. The data center has a 500 Mbps AWS Direct Connect link and a separate, fully available 1 Gbps ISP connection. A Solutions Architect must transfer 20 TB of data from the data center to an Amazon S3 bucket. What is the FASTEST way transfer the data?

- A. Upload the data to the S3 bucket using the existing DX link.
- B. Send the data to AWS using the AWS Import/Export service.
- C. Upload the data using an 80 TB AWS Snowball device.
- D. Upload the data to the S3 bucket using S3 Transfer Acceleration.

**Answer:** D

#### Explanation:

<https://aws.amazon.com/s3/faqs/>

#### NEW QUESTION 146

A company is having issues with a newly deployed server less 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 request 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 error logged by the services or applications. What might cause this problem?

- A. Lambda has very 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 mod
- E. During peak load, DynamoDB adjust capacity and through successfully.

**Answer:** A

#### NEW QUESTION 147

During a security audit of a Service team's application a Solutions Architect discovers that a username and password for an Amazon RDS database and a set of AWSIAM user credentials can be viewed in the AWS Lambda function code. The Lambda function uses the username and password to run queries on the database and it uses the IAM credentials to call AWS services in a separate management account. The Solutions Architect is concerned that the credentials could grant inappropriate access to anyone who can view the Lambda code The management account and the Service team's account are in separate AWS Organizations organizational units (OUs) Which combination of changes should the Solutions Architect make to improve the solution's security? (Select TWO)

- A. Configure Lambda to assume a role in the management account with appropriate access to AWS
- B. Configure Lambda to use the stored database credentials in AWS Secrets Manager and enable automatic rotation
- C. Create a Lambda function to rotate the credentials every hour by deploying a new Lambda version with the updated credentials
- D. Use an SCP on the management accounts OU to prevent IAM users from accessing resources in the Service team's account
- E. Enable AWS Shield Advanced on the management account to shield sensitive resources from unauthorized IAM access

**Answer:** BD

**NEW QUESTION 149**

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 objects
- 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 objects
- 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 153**

A company with multiple accounts is currently using a configuration that does not meet the following security governance policies

- Prevent ingress from port 22 to any Amazon EC2 instance
- Require billing and application tags for resources
- Encrypt all Amazon EBS volumes

A Solutions Architect wants to provide preventive and detective controls including notifications about a specific resource, if there are policy deviations.

Which solution should the Solutions Architect implement?

- A. Create an AWS CodeCommit repository containing policy-compliant AWS CloudFormation templates. Create an AWS Service Catalog portfolio. Import the CloudFormation templates by attaching the CodeCommit repository to the portfolio. Restrict users across all accounts to items from the AWS Service Catalog portfolio. Use AWS Config managed rules to detect deviations from the policies.
- B. Configure an Amazon CloudWatch Events rule for deviations, and associate a CloudWatch alarm to send notifications when the TriggeredRules metric is greater than zero.
- C. Use AWS Service Catalog to build a portfolio with products that are in compliance with the governance policies in a central account. Restrict users across all accounts to AWS Service Catalog products. Share a compliant portfolio to other accounts. Use AWS Config managed rules to detect deviations from the policies. Configure an Amazon CloudWatch Events rule to send a notification when a deviation occurs.
- D. Implement policy-compliant AWS CloudFormation templates for each account and ensure that all provisioning is completed by CloudFormation. Configure Amazon Inspector to perform regular checks against resources. Perform policy validation and write the assessment output to Amazon CloudWatch Log.
- E. Create a CloudWatch Logs metric filter to increment a metric when a deviation occurs. Configure a CloudWatch alarm to send notifications when the configured metric is greater than zero.
- F. Restrict users and enforce least privilege access using AWS IAM.
- G. Consolidate all AWS CloudTrail logs into a single account. Send the CloudTrail logs to Amazon Elasticsearch Service (Amazon ES). Implement monitoring, alerting, and reporting using the Kibana dashboard in Amazon ES and with Amazon SNS.

**Answer:** C

**NEW QUESTION 156**

A company that is new to AWS reports it has exhausted its service limits across several accounts that are on the Basic Support plan. The company would like to prevent this from happening in the future.

What is the MOST efficient way of monitoring and managing all service limits in the company's accounts?

- A. Use Amazon CloudWatch and AWS Lambda to periodically calculate the limits across all linked accounts using AWS Trusted Advisor, provide notifications using Amazon SNS if the limits are close to exceeding the threshold.
- B. Reach out to AWS Support to proactively increase the limits across all accounts.
- C. That way, the customer avoids creating and managing infrastructure just to raise the service limits.
- D. Use Amazon CloudWatch and AWS Lambda to periodically calculate the limits across all linked accounts using AWS Trusted Advisor, programmatically increase the limits that are close to exceeding the threshold.
- E. Use Amazon CloudWatch and AWS Lambda to periodically calculate the limits across all linked accounts using AWS Trusted Advisor, and use Amazon SNS for notifications if a limit is close to exceeding the threshold.
- F. Ensure that the accounts are using the AWS Business Support plan at a minimum.

**Answer:** D

**Explanation:**

<https://github.com/awslabs/aws-limit-monitor> <https://aws.amazon.com/solutions/limit-monitor/>

**NEW QUESTION 157**

A Solutions Architect is designing a highly available and reliable solution for a cluster of Amazon EC2 instances.

The Solutions Architect must ensure that any EC2 instance within the cluster recovers automatically after a system failure. The solution must ensure that the recovered instance maintains the same IP address.

How can these requirements be met?

- A. Create an AWS Lambda script to restart any EC2 instances that shut down unexpectedly.

- B. Create an Auto Scaling group for each EC2 instance that has a minimum and maximum size of 1.
- C. Create a new t2.micro instance to monitor the cluster instance
- D. Configure the t2.micro instance to issue an `aws ec2 reboot-instances` command upon failure.
- E. Create an Amazon CloudWatch alarm for the `StatusCheckFailed_System` metric, and then configure an EC2 action to recover the instance.

**Answer:** B

**Explanation:**

References: <https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-instance-recover.html>

**NEW QUESTION 160**

A company has developed a web application that runs on Amazon EC2 instances in one AWS Region. The company has taken on new business in other countries and must deploy its application into other to meet low-latency requirements for its users. The regions can be segregated, and an application running in one region does not need to communicate with instances in other regions.

How should the company's Solutions Architect automate the deployment of the application so that it can be MOST efficiently deployed into multiple regions?

- A. Write a bash script that uses the AWS CLI to query the current state in one region and output a JSON representatio
- B. Pass the JSON representation to the AWS CLI, specifying the `--region` parameter to deploy the application to other regions.
- C. Write a bash script that uses the AWS CLI to query the current state in one region and output an AWS CloudFormation templat
- D. Create a CloudFormation stack from the template by using the AWS CLI, specifying the `--region` parameter to deploy the application to other regions.
- E. Write a CloudFormation template describing the application's infrastructure in the resources section. Create a CloudFormation stack from the template by using the AWS CLI, specify multiple regions using the `--regions` parameter to deploy the application.
- F. Write a CloudFormation template describing the application's infrastructure in the Resources section. Use a CloudFormation stack set from an administrator account to launch stack instances that deploy the application to other regions.

**Answer:** D

**Explanation:**

A stack set lets you create stacks in AWS accounts across regions by using a single AWS CloudFormation template. All the resources included in each stack are defined by the stack set's AWS CloudFormation template. As you create the stack set, you specify the template to use, as well as any parameters and capabilities that template requires. <https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/stacksets-concepts.html>  
<https://sanderknape.com/2017/07/cloudformation-stacksets-automated-cross-account-region-deployments/>

**NEW QUESTION 163**

A Company has a security event whereby an Amazon S3 bucket with sensitive information was made public. Company policy is to never have public S3 objects, and the Compliance team must be informed immediately when any public objects are identified.

How can the presence of a public S3 object be detected, set to trigger alarm notifications, and automatically remediated in the future? (Choose two.)

- A. Turn on object-level logging for Amazon S3. Turn on Amazon S3 event notifications to notify by using an Amazon SNS topic when a `PutObject` API call is made with a `public-read` permission.
- B. Configure an Amazon CloudWatch Events rule that invokes an AWS Lambda function to secure the S3 bucket.
- C. Use the S3 bucket permissions for AWS Trusted Advisor and configure a CloudWatch event to notify by using Amazon SNS.
- D. Turn on object-level logging for Amazon S3. Configure a CloudWatch event to notify by using an SNS topic when a `PutObject` API call with `public-read` permission is detected in the AWS CloudTrail logs.
- E. Schedule a recursive Lambda function to regularly change all object permissions inside the S3 bucket.

**Answer:** BD

**Explanation:**

<https://aws.amazon.com/blogs/security/how-to-detect-and-automatically-remediate-unintended-permissions-in-a>

**NEW QUESTION 167**

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