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# AWS Certified Solutions Architect - Professional (SAP-C01)

## Amazon AWS AWS-Certified-Solutions-Architect-Professional-SAP-C01

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QUESTION NO: 1

A company has five physical data centers in specific locations around the world. Each data center has hundreds of physical servers with a mix of Windows and Linux-based applications and database services. Each data center also has an AWS Direct Connect connection of 10 Gbps to AWS with a company-approved VPN solution to ensure that data transfer is secure. The company needs to shut down the existing data centers as quickly as possible and migrate the servers and applications to AWS.

Which solution meets these requirements?

**A.** Install the AWS Server Migration Service (AWS SMS) connector onto each physical machine. Use the AWS Management Console to select the servers from the server catalog, and start the replication. Once the replication is complete, launch the Amazon EC2 instances created by the service.

**B.** Install the AWS DataSync agent onto each physical machine. Use the AWS Management Console to configure the destination to be an AMI, and start the replication. Once the replication is complete, launch the Amazon EC2 instances created by the service.

**C.** Install the CloudEndure Migration agent onto each physical machine. Create a migration blueprint, and start the replication. Once the replication is complete, launch the Amazon EC2 instances in cutover mode.

**D.** Install the AWS Application Discovery Service agent onto each physical machine. Use the AWS Migration Hub import option to start the replication. Once the replication is complete, launch the Amazon EC2 instances created by the service.

**ANSWER: A**

**QUESTION NO: 2**

An organization (account ID 123412341234) has configured the IAM policy to allow the user to modify his credentials.

What will the below mentioned statement allow the user to perform?

```
{
"Version": "2012-10-17",
"Statement": [{
"Effect": "Allow",
"Action": [
"iam:AddUserToGroup",
"iam:RemoveUserFromGroup",
"iam:GetGroup"
],
"Resource": "arn:aws:iam:: 123412341234:group/TestingGroup"
}
]
```

**A.** Allow the IAM user to update the membership of the group called TestingGroup

**B.** The IAM policy will throw an error due to an invalid resource name

**C.** The IAM policy will allow the user to subscribe to any IAM group

**D.** Allow the IAM user to delete the TestingGroup

**ANSWER: A**

**Explanation:**

AWS Identity and Access Management is a web service which allows organizations to manage users and user permissions for various AWS services. If the organization (account ID 123412341234) wants their users to manage their subscription to the groups, they should create a relevant policy for that. The below mentioned policy allows the respective IAM user to update the membership of the group called MarketingGroup.

{

"Version": "2012-10-17",

"Statement": [{

"Effect": "Allow", "Action": [ "iam:AddUserToGroup",

"iam:RemoveUserFromGroup", "iam:GetGroup"

],

"Resource": "arn:aws:iam:: 123412341234:group/ TestingGroup " }]

Reference:

http://docs.aws.amazon.com/IAM/latest/UserGuide/Credentials-Permissions-examples.html#creds-policies-credentials

## QUESTION NO: 3

A company with global offices has a single 1 Gbps AWS Direct Connect connection to a single AWS Region. The company's on-premises network uses the connection to communicate with the company's resources in the AWS Cloud. The connection has a single private virtual interface that connects to a single VPC.

A solutions architect must implement a solution that adds a redundant Direct Connect connection in the same Region. The solution also must provide connectivity to other Regions through the same pair of Direct Connect connections as the company expands into other Regions.

Which solution meets these requirements?

**A.** Provision a Direct Connect gateway. Delete the existing private virtual interface from the existing connection. Create the second Direct Connect connection. Create a new private virtual interface on each connection, and connect both private virtual interfaces to the Direct Connect gateway. Connect the Direct Connect gateway to the single VPC.

**B.** Keep the existing private virtual interface. Create the second Direct Connect connection. Create a new private virtual interface on the new connection, and connect the new private virtual interface to the single VPC.

**C.** Keep the existing private virtual interface. Create the second Direct Connect connection. Create a new public virtual interface on the new connection and connect the new public virtual interface to the single VPC.

**D.** Provision a transit gateway. Delete the existing private virtual interface from the existing connection. Create the second Direct Connect connection. Create a new private virtual interface on each connection, and connect both private virtual interfaces to the transit gateway. Associate the transit gateway with the single VPC.

## ANSWER: C

**Explanation:**

Reference: https://docs.aws.amazon.com/directconnect/latest/UserGuide/WorkingWithVirtualInterfaces.html

## QUESTION NO: 4

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. Configure the environment with a custom AMI to use a hardened machine image from AWS Marketplace. Apply system updates with AWS Systems Manager Patch Manager.

**B.** Run the host on AWS WorkSpaces. Use Amazon WorkSpaces Application Manager (WAM) to harden the host. Configure Windows automatic updates to occur every 3 days.

**C.** 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. Apply system updates with AWS Systems Manager Patch Manager.

**D.** Run the host in AWS OpsWorks Stacks. Use a Chief 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**

**Explanation:**

Reference: https://docs.aws.amazon.com/workspaces/latest/adminguide/workspace-maintenance.html

## QUESTION NO: 5

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 AWS IAM 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? (Choose 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 account's 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: B D**

## QUESTION NO: 6

A Solutions Architect must build a highly available infrastructure for a popular global video game that runs on a mobile phone platform. The application runs on Amazon EC2 instances behind an Application Load Balancer. The instances run in an Auto Scaling group across multiple Availability Zones. The database tier is an Amazon RDS MySQL Multi-AZ instance. The entire application stack is deployed in both us-east-1 and eu-central-1. Amazon Route 53 is used to route traffic to the two installations using a latency-based routing policy. A weighted routing policy is configured in Route 53 as a fail over to another region in case the installation in a region becomes unresponsive.

During the testing of disaster recovery scenarios, after blocking access to the Amazon RDS MySQL instance in eu-central-1 from all the application instances running in that region. Route 53 does not automatically failover all traffic to us-east-1.

Based on this situation, which changes would allow the infrastructure to failover to us-east-1? (Choose two.)

**A.** Specify a weight of 100 for the record pointing to the primary Application Load Balancer in us-east-1 and a weight of 60 for the pointing to the primary Application Load Balancer in eu-central-1.

**B.** Specify a weight of 100 for the record pointing to the primary Application Load Balancer in us-east-1 and a weight of 0 for the record pointing to the primary Application Load Balancer in eu-central-1.

**C.** Set the value of Evaluate Target Health to Yes on the latency alias resources for both eu-central-1 and us-east-1.

**D.** Write a URL in the application that performs a health check on the database layer. Add it as a health check within the weighted routing policy in both regions.

**E.** Disable any existing health checks for the resources in the policies and set a weight of 0 for the records pointing to primary in both eu-central-1 and us-east-1, and set a weight of 100 for the primary Application Load Balancer only in the region that has healthy resources.

**ANSWER: B C**

## QUESTION NO: 7

A company is running a workload that consists of thousands of Amazon EC2 instances. The workload is running in a VPC that contains several public subnets and private subnets. The public subnets have a route for 0.0.0.0/0 to an existing internet gateway. The private subnets have a route for 0.0.0.0/0 to an existing NAT gateway.

A solutions architect needs to migrate the entire fleet of EC2 instances to use IPv6. The EC2 instances that are in private subnets must not be accessible from the public internet.

What should the solutions architect do to meet these requirements?

**A.** Update the existing VPC, and associate a custom IPv6 CIDR block with the VPC and all subnets. Update all the VPC route tables, and add a route for ::/0 to the internet gateway.

**B.** Update the existing VPC, and associate an Amazon-provided IPv6 CIDR block with the VPC and all subnets. Update the VPC route tables for all private subnets, and add a route for ::/0 to the NAT gateway.

**C.** Update the existing VPC, and associate an Amazon-provided IPv6 CIDR block with the VPC and all subnets. Create an egress-only internet gateway. Update the VPC route tables for all private subnets, and add a route for ::/0 to the egress-only internet gateway.

**D.** Update the existing VPC, and associate a custom IPv6 CIDR block with the VPC and all subnets. Create a new NAT gateway, and enable IPv6 support. Update the VPC route tables for all private subnets, and add a route for ::/0 to the IPv6-enabled NAT gateway.

**ANSWER: C**

## QUESTION NO: 8

A company is running an application in the AWS Cloud. The company has several third-party services that integrate with the application through a RESTful API. The API is a serverless implementation with an Amazon API Gateway regional API endpoint that integrates with several different AWS Lambda functions.

The application's data is nonrelational and is stored in an Amazon DynamoDB table. The application and the API are running in the eu-west-1 Region. The company needs the API to also be available in the us-east-1 Region. All data must be available in both Regions. A solutions architect already has deployed all the Lambda functions in us-east-1

Which additional steps should the solutions architect take to meet these requirements? (Select TWO.)

**A.** Deploy a second API Gateway regional API endpoint in us-east-1. Create Lambda integration with the functions in us-east-1.

**B.** Enable DynamoDB Streams on the table in eu-west-1. Replicate all changes to a DynamoDB table in us-east-1

**C.** Modify the DynamoDB table to be a global table in eu-west-1 and in us-east-1.

**D.** Change the API Gateway API endpoint in eu-west-1 to an edge-optimized endpoint. Create Lambda integration with the functions in both Regions.

**E.** Create a DynamoDB read replica in us-east-1.

**ANSWER: A C**

## QUESTION NO: 9

A solutions architect is designing an application to accept timesheet entries from employees on their mobile devices. Timesheets will be submitted weekly, with most of the submissions occurring on Friday. The data must be stored in a format that allows payroll administrators to run monthly reports. The infrastructure must be highly available and scale to match the rate of incoming data and reporting requests.

Which combination of steps meets these requirements while minimizing operational overhead? (Select TWO.)

**A.** Deploy the application to Amazon EC2 On-Demand Instances With load balancing across multiple Availability Zones. Use scheduled Amazon EC2 Auto Scaling to add capacity before the high volume of submissions on Fridays.

**B.** Deploy the application in a container using Amazon Elastic Container Service (Amazon ECS) with load balancing across multiple Availability Zones. Use scheduled Service Auto Scaling to add capacity before the high volume of submissions on Fridays.

**C.** Deploy the application front end to an Amazon S3 bucket served by Amazon CloudFront. Deploy the application backend using Amazon API Gateway with an AWS Lambda proxy integration.

**D.** Store the timesheet submission data in Amazon Redshift. Use Amazon OuickSight to generate the reports using Amazon Redshift as the data source.

**E.** Store the timesheet submission data in Amazon S3. Use Amazon Athena and Amazon OuickSight to generate the reports using Amazon S3 as the data source.

**ANSWER: A E**

## QUESTION NO: 10

A large company has increased its utilization of AWS over time in an unmanaged way. As such, they have a large number of independent AWS accounts across different business units, projects, and environments. The company has created a Cloud Center of Excellence team, which is responsible for managing all aspects of the AWS Cloud, including their AWS accounts.

Which of the following should the Cloud Center of Excellence team do to BEST address their requirements in a centralized way? (Choose two.)

**A.** Control all AWS account root user credentials. Assign AWS IAM users in the account of each user who needs to access AWS resources. Follow the policy of least privilege in assigning permissions toeach user.

**B.** Tag all AWS resources with details about the business unit, project, and environment. Send all AWS Cost and Usage reports to a central Amazon S3 bucket, and use tools such as Amazon Athena and Amazon QuickSight to collect billing details by business unit.

**C.** Use the AWS Marketplace to choose and deploy a Cost Management tool. Tag all AWS resources with details about the business unit, project, and environment. Send all AWS Cost and Usage reports for the AWS accounts to this tool for analysis.

**D.** Set up AWS Organizations. Enable consolidated billing, and link all existing AWS accounts to a master billing account. Tag all AWS resources with details about the business unit, project and environment. Analyze Cost and Usage reports using tools such as Amazon Athena and Amazon QuickSight, to collect billing details by business unit.

**E.** Using a master AWS account, create IAM users within the master account. Define IAM roles in the other AWS accounts, which cover each of the required functions in the account. Follow the policy of least privilege in assigning permissions to each role, then enable the IAM users to assume the roles that they need to use.

**ANSWER: A D**

## QUESTION NO: 11

A company is currently in the design phase of an application that will need an RPO of less than 5 minutes and an RTO of less than 10 minutes. The solutions architecture team is forecasting that the database will store approximately 10 TB of data. As part of the design, they are looking for a database solution that will provide the company with the ability to fail over to a secondary Region.

Which solution will meet these business requirements at the LOWEST cost?

**A.** Deploy an Amazon Aurora DB cluster and take snapshots of the cluster every 5 minutes. Once a snapshot is complete, copy the snapshot to a secondary Region to serve as a backup in the event of a failure.

**B.** Deploy an Amazon RDS instance with a cross-Region read replica in a secondary Region. In the event of a failure, promote the read replica to become the primary.

**C.** Deploy an Amazon Aurora DB cluster in the primary Region and another in a secondary Region. Use AWS DMS to keep the secondary Region in sync.

**D.** Deploy an Amazon RDS instance with a read replica in the same Region. In the event of a failure, promote the read replica to become the primary.

**ANSWER: B**

## QUESTION NO: 12

You are the new IT architect in a company that operates a mobile sleep tracking application.

When activated at night, the mobile app is sending collected data points of 1 kilobyte every 5 minutes to your backend.

The backend takes care of authenticating the user and writing the data points into an Amazon DynamoDB table.

Every morning, you scan the table to extract and aggregate last night's data on a per user basis, and store the results in Amazon S3. Users are notified via Amazon SNS mobile push notifications that new data is available, which is parsed and visualized by the mobile app.

Currently you have around 100k users who are mostly based out of North America.

You have been tasked to optimize the architecture of the backend system to lower cost.

What would you recommend? (Choose two.)

**A.** Have the mobile app access Amazon DynamoDB directly Instead of JSON files stored on Amazon S3.

**B.** Write data directly into an Amazon Redshift cluster replacing both Amazon DynamoDB and Amazon S3.

**C.** Introduce an Amazon SQS queue to buffer writes to the Amazon DynamoDB table and reduce provisioned write throughput.

**D.** Introduce Amazon Elasticache to cache reads from the Amazon DynamoDB table and reduce provisioned read throughput.

**E.** Create a new Amazon DynamoDB table each day and drop the one for the previous day after its data is on Amazon S3.

**ANSWER: C D**

**Explanation:**

Reference: https://d0.awsstatic.com/whitepapers/performance-at-scale-with-amazon-elasticache.pdf

## QUESTION NO: 13

A user has launched an EBS optimized instance with EC2. Which of the below mentioned options is the correct statement?

**A.** It provides additional dedicated capacity for EBS IO

**B.** The attached EBS will have greater storage capacity

**C.** The user will have a PIOPS based EBS volume

**D.** It will be launched on dedicated hardware in VPC

**ANSWER: A**

**Explanation:**

An Amazon EBS-optimized instance uses an optimized configuration stack and provides additional, dedicated capacity for the Amazon EBS I/O. This optimization provides the best performance for the user's Amazon EBS volumes by minimizing contention between the Amazon EBS I/O and other traffic from the user's instance.

Reference: http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EBSOptimized.html

## QUESTION NO: 14

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 T2 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**

## QUESTION NO: 15

A software company is using three AWS accounts for each of its 10 development teams. The company has developed an AWS CloudFormation standard VPC template that includes three NAT gateways. The template is added to each account for each team. The company is concerned that network costs will increase each time a new development team is added. A solutions architect must maintain the reliability of the company's solutions and minimize operational complexity.

What should the solutions architect do to reduce the network costs while meeting these requirements?

**A.** Create a single VPC with three NAT gateways in a shared services account. Configure each account VPC with a default route through a transit gateway to the NAT gateway in the shared services account VPC. Remove all NAT gateways from the standard VPC template.

**B.** Create a single VPC with three NAT gateways in a shared services account. Configure each account VPC with a default route through a VPC peering connection to the NAT gateway in the shared services account VPC. Remove all NAT gateways from the standard VPC template.

**C.** Remove two NAT gateways from the standard VPC template. Rely on the NAT gateway SLA to cover reliability for the remaining NAT gateway.

**D.** Create a single VPC with three NAT gateways in a shared services account. Configure a Site-to-Site VPN connection from each account to the shared services account. Remove all NAT gateways from the standard VPC template.

**ANSWER: B**

## QUESTION NO: 16

A company has multiple lines of business (LOBs) that roll up to the parent company. The company has asked its solutions architect to develop a solution with the following requirements:

- Produce a single AWS invoice for all of the AWS accounts used by its LOBs.
- The costs for each LOB account should be broken out on the invoice.
- Provide the ability to restrict services and features in the LOB accounts, as defined by the company's governance policy.
- Each LOB account should be delegated full administrator permissions, regardless of the governance policy.

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

**A.** Use AWS Organizations to create an organization in the parent account for each LOB. Then, invite each LOB account to the appropriate organization.

**B.** Use AWS Organizations to create a single organization in the parent account. Then, invite each LOB's AWS account to pin the organization.

**C.** Implement service quotas to define the services and features that are permitted and apply the quotas to each LOB as appropriate.

**D.** Create an SCP that allows only approved services and features, then apply the policy to the LOB accounts. Enable consolidated billing in the parent account's billing console and link the LOB accounts.

**ANSWER: C D**

## QUESTION NO: 17

A company has a photo sharing social networking application. To provide a consistent experience for users, the company performs some image processing on the photos uploaded by users before publishing on the application. The image processing is implemented using a set of Python libraries.

The current architecture is as follows:

- The image processing Python code runs in a single Amazon EC2 instance and stores the processed images in an Amazon S3 bucket named ImageBucket.
- The front-end application, hosted in another bucket, loads the images from ImageBucket to display to users.

With plans for global expansion, the company wants to implement changes in its existing architecture to be able to scale for increased demand on the application and reduce management complexity as the application scales.

Which combination of changes should a solutions architect make? (Choose two.)

**A.** Place the image processing EC2 instance into an Auto Scaling group.

**B.** Use AWS Lambda to run the image processing tasks.

**C.** Use Amazon Rekognition for image processing.

**D.** Use Amazon CloudFront in front of ImageBucket.

**E.** Deploy the applications in an Amazon ECS cluster and apply Service Auto Scaling.

**ANSWER: D E**

## QUESTION NO: 18

A company is using multiple AWS accounts. The company has a shared services account and several other accounts (or different projects.

A team has a VPC in a project account. The team wants to connect this VPC to a corporate network through an AWS Direct Connect gateway that exists in the shared services account. The team wants to automatically perform a virtual private gateway association with the Direct Connect gateway by using an already-tested AWS Lambda function while deploying its VPC networking stack. The Lambda function code can assume a role by using AWS Security Token Service (AWS STS). The team is using AWS Cloud Formation to deploy its infrastructure.

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

**A.** Deploy the Lambda function to the project account. Update the Lambda function's 1AM role with the directconnect:* permission

**B.** Create a cross-account 1AM role in the shared services account that grants the Lambda function the directconnect:" permission. Add the sts:AssumeRo!e
permission to the 1AM role that is associated with the Lambda function in the shared services account.

**C.** Add a custom resource to the Cloud Formation networking stack that references the Lambda function in the project account.

**D.** Deploy the Lambda function that is performing the association to the shared services account. Update the Lambda function's 1AM role with the directconnect:' permission.

**E.** Create a cross-account 1AM role in the shared services account that grants the sts: Assume Role permission to the Lambda function with the directconnect:"
permission acting as a resource. Add the sts AssumeRole permission with this cross-account 1AM role as a resource to the 1AM role that belongs to the Lambda function in the project account.

**F.** Add a custom resource to the Cloud Formation networking stack that references the Lambda function in the shared services account.

**ANSWER: B C E**

## QUESTION NO: 19

A company runs an IoT platform on AWS IoT sensors in various locations send data to the company's Node js API servers on Amazon EC2 instances running behind an Application Load Balancer The data is stored in an Amazon RDS MySQL DB instance that uses a 4 TB General Purpose SSD volume

The number of sensors the company has deployed in the field has increased over time and is expected to grow significantly The API servers are consistently overloaded and RDS metrics show high write latency

Which of the following steps together will resolve the issues permanently and enable growth as new sensors are provisioned, while keeping this platform cost-efficient? {Select TWO.)

**A.** Resize the MySQL General Purpose SSD storage to 6 TB to improve the volume's IOPS

**B.** Re-architect the database tier to use Amazon Aurora instead of an RDS MySQL DB instance and add read replicas

**C.** Leverage Amazon Kinesis Data Streams and AWS Lambda to ingest and process the raw data

**D.** Use AWS X-Ray to analyze and debug application issues and add more API servers to match the load

**E.** Re-architect the database tier to use Amazon DynamoDB instead of an RDS MySQL DB instance

**ANSWER: C E**

## QUESTION NO: 20

Your company has an on-premises multi-tier PHP web application, which recently experienced downtime due to a large burst in web traffic due to a company announcement Over the coming days, you are expecting similar announcements to drive similar unpredictable bursts, and are looking to find ways to quickly improve your infrastructures ability to handle unexpected increases in traffic.

The application currently consists of 2 tiers a web tier which consists of a load balancer and several Linux Apache web servers as well as a database tier which hosts a Linux server hosting a MySQL database.

Which scenario below will provide full site functionality, while helping to improve the ability of your application in the short timeframe required?

**A.** Failover environment: Create an S3 bucket and configure it for website hosting. Migrate your DNS to Route53 using zone file import, and leverage Route53 DNS failover to failover to the S3 hosted website.

**B.** Hybrid environment: Create an AMI, which can be used to launch web servers in EC2. Create an Auto Scaling group, which uses the AMI to scale the web tier based on incoming traffic. Leverage Elastic Load Balancing to balance traffic between on-premises web servers and those hosted in AWS.

**C.** Offload traffic from on-premises environment: Setup a CloudFront distribution, and configure CloudFront to cache objects from a custom origin. Choose to customize your object cache behavior, and select a TTL that objects should exist in cache.

**D.** Migrate to AWS: Use VM Import/Export to quickly convert an on-premises web server to an AMI. Create an Auto Scaling group, which uses the imported AMI to scale the web tier based on incoming traffic. Create an RDS read replica and setup replication between the RDS instance and on-premises MySQL server to migrate the database.

**ANSWER: C**

**Explanation:**

You can have CloudFront sit in front of your on-prem web environment, via a custom origin (the origin doesn't have to be in AWS). This would protect against unexpected bursts in traffic by letting CloudFront handle the traffic that it can out of cache, thus hopefully removing some of the load from your on-prem web servers.