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QUESTION 1

A company has a complex web application that leverages Amazon CloudFront for global scalability and performance. Over time, users report that the web application is slowing down.

The company\\'s operations team reports that the CloudFront cache hit ratio has been dropping steadily. The cache metrics report indicates that query strings on some URLs are inconsistently ordered and are specified sometimes in mixed-case letters and sometimes in lowercase letters.

Which set of actions should the solutions architect take to increase the cache hit ratio as quickly as possible?

A. Deploy a Lambda@Edge function to sort parameters by name and force them to be lowercase. Select the CloudFront viewer request trigger to invoke the function.

B. Update the CloudFront distribution to disable caching based on query string parameters.

C. Deploy a reverse proxy after the load balancer to post-process the emitted URLs in the application to force the URL strings to be lowercase.

D. Update the CloudFront distribution to specify casing-insensitive query string processing.

Correct Answer: A

https://docs.amazonaws.cn/en_us/AmazonCloudFront/latest/DeveloperGuide/lambda- examples.html#lambda-examples-query-string-examples Before CloudFront serves content from the cache it will trigger any Lambda function associated with the Viewer Request, in which we can normalize parameters. https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/lambda- examples.html#lambda-examples-normalize-query-string-parameters

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QUESTION 2

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

The company\\'s existing architecture includes the following:

1.

 A VPC with private and public subnets, and a NAT gateway

2.

 Site-to-Site VPN for connectivity with the on-premises environment

3.

 EC2 security groups with direct SSH access from the on-premises environment

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

Which strategy should a solutions architect use?

A. Install and configure EC2 Instance Connect on the fleet of EC2 instances. Remove all security group rules attached to EC2 instances that allow inbound TCP on port 22. Advise the engineers to remotely access the instances by using the EC2 Instance Connect CLI.

B. Update the EC2 security groups to only allow inbound TCP on port 22 to the IP addresses of the engineer\\'s devices. Install the Amazon CloudWatch agent on all EC2 instances and send operating system audit logs to CloudWatch Logs.

C. Update the EC2 security groups to only allow inbound TCP on port 22 to the IP addresses of the engineer\\'s devices. Enable AWS Config for EC2 security group resource changes. Enable AWS Firewall Manager and apply a security group policy that automatically remediates changes to rules.

D. Create an IAM role with the AmazonSSMManagedInstanceCore managed policy attached. Attach the IAM role to all the EC2 instances. Remove all security group rules attached to the EC2 instances that allow inbound TCP on port 22. Have the engineers install the AWS Systems Manager Session Manager plugin for their devices and remotely access the instances by using the start-session API call from Systems Manager.

Correct Answer: D

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

https://docs.aws.amazon.com/systems-manager/latest/userguide/session-manager-working-with-install-plugin.html https ://docs.aws.amazon.com/systems-manager/latest/userguide/session-manager-working-with-installplugin.html#:~:text=aws%20ssm%20start%2Dsession%20%2D%2Dtarget%20instance%2Did

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QUESTION 3

A company implements a containerized application by using Amazon Elastic Container Service (Amazon ECS) and Amazon API Gateway. The application data is stored in Amazon Aurora databases and Amazon DynamoDB databases. The company automates infrastructure provisioning by using AWS CloudFormalion. The company automates application deployment by using AWS CodePipeline.

A solutions architect needs to implement a disaster recovery (DR) strategy that meets an RPO of 2 hours and an RTO of 4 hours.

Which solution will meet these requirements MOST cost-effectively?

A. Set up an Aurora global database and DynamoDB global tables to replicate the databases to a secondary AWS Region. In the primary Region and in the secondary Region, configure an API Gateway API with a Regional endpoint. Implement Amazon CloudFront with origin failover to route traffic to the secondary Region during a DR scenario.

B. Use AWS Database Migration Service (AWS DMS). Amazon EventBridge (Amazon CloudWatch Events). and AWS Lambda to replicate the Aurora databases to a secondary AWS Region. Use DynamoDB Streams. EventBridge (CloudWatch Events). and Lambda to replicate the DynamoDB databases to the secondary Region. In the primary Region and In the secondary Region, configure an API Gateway API with a Regional endpoint. Implement Amazon Route 53 failover routing to switch traffic from the primary Region to the secondary Region.

C. Use AWS Backup to create backups of the Aurora databases and the DynamoDB databases in a secondary AWS Region. In the primary Region and in the secondary Region, configure an API Gateway API with a Regional endpoint. Implement Amazon Route 53 failover routing to switch traffic from the primary Region to the secondary Region

D. Set up an Aurora global database and DynamoDB global tables to replicate the databases to a secondary AWS Region. In the primary Region and in the secondary Region, configure an API Gateway API with a Regional endpoint. Implement Amazon Route 53 failover routing to switch traffic from the primary Region to the secondary Region.

Correct Answer: C

https://aws.amazon.com/blogs/database/cost-effective-disaster-recovery-for-amazon-aurora-databases-using-aws-backup/

QUESTION 4

A company uses AWS Cloud Formation to deploy applications within multiple VPCs that are all attached to a transit gateway. Each VPC that sends traffic to the public internet must send the traffic through a shared services VPC. Each subnet within a VPC uses the default VPC route table, and the traffic is routed to the transit gateway. The transit gateway uses its default route table for any VPC attachment.

A security audit reveals that an Amazon EC2 instance that is deployed within a VPC can communicate with an EC2 instance that is deployed in any of the company\\'s other VPCs. A solutions architect needs to limit the traffic between the VPCs. Each VPC must be able to communicate only with a predefined, limited set of authorized VPCs.

What should the solutions architect do to meet these requirements?

A. Update the network ACL of each subnet within a VPC to allow outbound traffic only to the authorized VPCs. Remove all deny rules except the default deny rule.

B. Update all the security groups that are used within a VPC to deny outbound traffic to security groups that are used within the unauthorized VPCs

C. Create a dedicated transit gateway route table for each VPC attachment. Route traffic only to the authorized VPCs.

D. Update the main route table of each VPC to route traffic only to the authorized VPCs through the transit gateway.

Correct Answer: C

You can segment your network by creating multiple route tables in an AWS Transit Gateway and associate Amazon VPCs and VPNs to them. This will allow you to create isolated networks inside an AWS Transit Gateway similar to virtual

routing and forwarding (VRFs) in traditional networks. The AWS Transit Gateway will have a default route table.

The use of multiple route tables is optional.

QUESTION 5

A company is designing an AWS Organizations structure. The company wants to standardize a process to apply tags across the entire organization. The company will require tags with specific values when a user creates a new resource. Each of the company\\'s OUs will have unique tag values.

Which solution will meet these requirements?

A. Use an SCP to deny the creation of resources that do not have the required tags. Create a tag policy that Includes the tag values that the company has assigned to each OU. Attach the tag policies to the OUs.

B. Use an SCP to deny the creation of resources that do not have the required tags. Create a tag policy that includes the tag values that the company has assigned to each OU. Attach the tag policies to the organization\\'s management account.

C. Use an SCP to allow the creation of resources only when the resources have the required tags. Create a tag policy that includes the tag values that the company has assigned to each OU. Attach the tag policies to the OUs.

D. Use an SCP to deny the creation of resources that do not have the required tags. Define the list of tags. Attach the SCP to the OUs

Correct Answer: A

https://aws.amazon.com/blogs/mt/implement-aws-resource-tagging-strategy-using-aws-tag-policies-and-service-control-policies-scps/

QUESTION 6

A solutions architect needs to advise a company on how to migrate its on-premises data processing application to the AWS Cloud. Currently, users upload input files through a web portal. The web server then stores the uploaded files on NAS and messages the processing server over a message queue. Each media file can take up to 1 hour to process. The company has determined that the number of media files awaiting processing is significantly higher during business hours, with the number of files rapidly declining after business hours.

What is the MOST cost-effective migration recommendation?

A. Create a queue using Amazon SQS. Configure the existing web server to publish to the new queue. When there are messages in the queue, invoke an AWS Lambda function to pull requests from the queue and process the files. Store the processed files in an Amazon S3 bucket.

B. Create a queue using Amazon MO. Configure the existing web server to publish to the new queue. When there are messages in the queue, create a new Amazon EC2 instance to pull requests from the queue and process the files. Store the processed files in Amazon EFS. Shut down the EC2 instance after the task is complete.

C. Create a queue using Amazon MO. Configure the existing web server to publish to the new queue. When there are messages in the queue, invoke an AWS Lambda function to pull requests from the queue and process the files. Store the processed files in Amazon EFS.

D. Create a queue using Amazon SOS. Configure the existing web server to publish to the new queue. Use Amazon EC2 instances in an EC2 Auto Scaling group to pull requests from the queue and process the files. Scale the EC2 instances based on the SOS queue length. Store the processed files in an Amazon S3 bucket.

Correct Answer: D

https://aws.amazon.com/blogs/compute/operating-lambda-performance-optimization-part-1/

QUESTION 7

A company uses AWS Organizations to manage its AWS accounts. The company needs a list of all its Amazon EC2 instances that have underutilized CPU or memory usage. The company also needs recommendations for how to downsize these underutilized instances.

Which solution will meet these requirements with the LEAST effort?

A. Install a CPU and memory monitoring tool from AWS Marketplace on all the EC2 Instances. Store the findings in Amazon S3. Implement a Python script to identify underutilized instances. Reference EC2 instance pricing information for recommendations about downsizing options.

B. Install the Amazon CloudWatch agent on all the EC2 instances by using AWS Systems Manager. Retrieve the resource op! nization recommendations from AWS Cost Explorer in the organization\\'s management account. Use the recommendations to downsize underutilized instances in all accounts of the organization.

C. Install the Amazon CloudWatch agent on all the EC2 instances by using AWS Systems Manager. Retrieve the resource optimization recommendations from AWS Cost Explorer in each account of the organization. Use the recommendations to downsize underutilized instances in all accounts of the organization.

D. Install the Amazon CloudWatch agent on all the EC2 instances by using AWS Systems Manager Create an AWS Lambda function to extract CPU and memory usage from all the EC2 instances. Store the findings as files in Amazon S3. Use Amazon Athena to find underutilized instances. Reference EC2 instance pricing information for recommendations about downsizing options.

Correct Answer: B

QUESTION 8

A company uses multiple AWS accounts in a single AWS Region A solutions architect is designing a solution to consolidate logs generated by Elastic Load Balancers (ELBs) in the AppDev, AppTest and AppProd accounts. The logs should be stored in an existing Amazon S3 bucket named s3-eib-logs in the central AWS account. The central account is used for log consolidation only and does not have ELBs deployed ELB logs must be encrypted at rest

Which combination of steps should the solutions architect take to build the solution\\'\\' (Select TWO)

A. Update the S3 bucket policy for the s3-elb-logs bucket to allow the s3 PutBucketLogging action for the central AWS account ID

B. Update the S3 bucket policy for the s3-eib-logs bucket to allow the s3 PutObject and s3 DeleteObject actions for the AppDev AppTest and AppProd account IDs

C. Update the S3 bucket policy for the s3-elb-logs bucket to allow the s3 PutObject action for the AppDev AppTest and AppProd account IDs

D. Enable access logging for the ELBs. Set the S3 location to the s3-elb-logs bucket

E. Enable Amazon S3 default encryption using server-side encryption with S3 managed encryption keys (SSE-S3) for the s3-elb-logs S3 bucket

Correct Answer: AE

QUESTION 9

A company is migrating an application from on-premises infrastructure to the AWS Cloud. During migration design meetings, the company expressed concerns about the availability and recovery options for its legacy Windows file server. The file server contains sensitive business-critical data that cannot be recreated in the event of data corruption or data loss. According to compliance requirements, the data must not travel across the public internet. The company wants to move to AWS managed services where possible.

The company decides to store the data in an Amazon FSx for Windows File Server file system. A solutions architect must design a solution that copies the data to another AWS Region for disaster recovery (DR) purposes.

Which solution will meet these requirements?

A. Create a destination Amazon S3 bucket in the DR Region. Establish connectivity between the FSx for Windows File Server file system in the primary Region and the S3 bucket in the DR Region by using Amazon FSx File Gateway. Configure the S3 bucket as a continuous backup source in FSx File Gateway.

B. Create an FSx for Windows File Server file system in the DR Region. Establish connectivity between the VPC in the primary Region and the VPC in the DR Region by using AWS Site-to-Site VPN. Configure AWS DataSync to communicate by using VPN endpoints.

C. Create an FSx for Windows File Server file system in the DR Region. Establish connectivity between the VPC in the primary Region and the VPC in the DR Region by using VPC peering. Configure AWS DataSync to communicate by using interface VPC endpoints with AWS PrivateLink.

D. Create an FSx for Windows File Server file system in the DR Region. Establish connectivity between the VPC in the primary Region and the VPC in the DR Region by using AWS Transit Gateway in each Region. Use AWS Transfer Family to copy files between the FSx for Windows File Server file system in the primary Region and the FSx for Windows File Server file system in the DR Region over the private AWS backbone network.

Correct Answer: C

The best solution is to create an FSx for Windows File Server file system in the DR Region and establish connectivity between the VPCs in both Regions by using VPC peering. This will ensure that the data does not travel across the public internet and meets the compliance requirements. By using AWS DataSync with interface VPC endpoints and AWS PrivateLink, the data can be copied securely and efficiently between the FSx for Windows File Server file systems in both Regions. This solution also provides the ability to fail over to the DR Region in case of a disaster. References: [Amazon FSx for Windows File Server User Guide], [AWS DataSync User Guide], [Amazon VPC User Guide]

QUESTION 10

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

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

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

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

A. Create a new account to serve as a management account. Create an Amazon S3 bucket for the finance learn Use AWS Cost and Usage Reports to create monthly reports and to store the data in the finance team\'s S3 bucket.

B. Create a new account to serve as a management account. Deploy an organization in AWS Organizations with all features enabled. Invite all the existing accounts to the organization. Ensure that each account accepts the invitation.

C. Create an OU that includes all the development teams. Create an SCP that allows the creation of resources only in Regions that are in the United States. Apply the SCP to the OU.

D. Create an OU that includes all the development teams. Create an SCP that denies (he creation of resources in Regions that are outside the United States. Apply the SCP to the OU.

E. Create an 1AM role in the management account Attach a policy that includes permissions to view the Billing and Cost Management console. Allow the finance learn users to assume the role. Use AWS Cost Explorer and the Billing and

Cost Management console to analyze cost.

F. Create an 1AM role in each AWS account. Attach a policy that includes permissions to view the Billing and Cost Management console. Allow the finance team users to assume the role.

Correct Answer: BCE

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

QUESTION 11

A company\'s site reliability engineer is performing a review of Amazon FSx for Windows File Server deployments within an account that the company acquired Company policy states that all Amazon FSx file systems must be configured to be highly available across Availability Zones.

During the review, the site reliability engineer discovers that one of the Amazon FSx file systems used a deployment type of Single-AZ 2 A solutions architect needs to minimize downtime while aligning this Amazon FSx file system with company policy.

What should the solutions architect do to meet these requirements?

A. Reconfigure the deployment type to Multi-AZ for this Amazon FSx tile system

B. Create a new Amazon FSx fie system with a deployment type o(Multi-AZ. Use AWS DataSync to transfer data to the new Amazon FSx file system. Point users to the new location

C. Create a second Amazon FSx file system with a deployment type of Single-AZ 2. Use AWS DataSync to keep the data n sync. Switch users to the second Amazon FSx fie system in the event of failure

D. Use the AWS Management Console to take a backup of the Amazon FSx He system Create a new Amazon FSx file system with a deployment type of Multi-AZ Restore the backup to the new Amazon FSx file system. Point users to the new location.

Correct Answer: B

QUESTION 12

A company has an organization in AWS Organizations that includes a separate AWS account for each of the

company\\'s departments. Application teams from different departments develop and deploy solutions independently.

The company wants to reduce compute costs and manage costs appropriately across departments. The company also wants to improve visibility into billing for individual departments. The company does not want to lose operational flexibility when the company selects compute resources.

Which solution will meet these requirements?

A. Use AWS Budgets for each department. Use Tag Editor to apply tags to appropriate resources. Purchase EC2 Instance Savings Plans.

B. Configure AWS Organizations to use consolidated billing. Implement a tagging strategy that identifies departments. Use SCPs to apply tags to appropriate resources. Purchase EC2 Instance Savings Plans.

C. Configure AWS Organizations to use consolidated billing. Implement a tagging strategy that identifies departments. Use Tag Editor to apply tags to appropriate resources. Purchase Compute Savings Plans.

D. Use AWS Budgets for each department. Use SCPs to apply tags to appropriate resources. Purchase Compute Savings Plans.

Correct Answer: C

QUESTION 13

A security engineer determined that an existing application retrieves credentials to an Amazon RDS for MySQL database from an encrypted file in Amazon S3. For the next version of the application, the security engineer wants to implement

the following application design changes to improve security:

The database must use strong, randomly generated passwords stored in a secure AWS managed service.

The application resources must be deployed through AWS CloudFormation. The application must rotate credentials for the database every 90 days. A solutions architect will generate a CloudFormation template to deploy the application.

Which resources specified in the CloudFormation template will meet the security engineer\\'s requirements with the LEAST amount of operational overhead?

A. Generate the database password as a secret resource using AWS Secrets Manager. Create an AWS Lambda function resource to rotate the database password. Specify a Secrets Manager RotationSchedule resource to rotate the database password every 90 days.

B. Generate the database password as a SecureString parameter type using AWS Systems Manager Parameter Store. Create an AWS Lambda function resource to rotate the database password. Specify a Parameter Store RotationSchedule resource to rotate the database password every 90 days.

C. Generate the database password as a secret resource using AWS Secrets Manager. Create an AWS Lambda function resource to rotate the database password. Create an Amazon EventBridge scheduled rule resource to trigger the Lambda function password rotation every 90 days.

D. Generate the database password as a SecureString parameter type using AWS Systems Manager Parameter Store. Specify an AWS AppSync DataSource resource to automatically rotate the database password every 90 days.

Correct Answer: A

https://aws.amazon.com/blogs/security/how-to-securely-provide-database-credentials-to-lambda-functions-by-using-aws-secrets-manager/ https://docs.aws.amazon.com/secretsmanager/latest/userguide/rotating-secrets.html
https://docs.aws.amazon.com/secretsmanager/latest/userguide/integrating_cloudformation.html

QUESTION 14

A company plans to deploy a new private Intranet service on Amazon EC2 instances inside a VPC. An AWS Site-to-Site VPN connects the VPC to the company\\'s ort-premises network. The new service must communicate with existing on-premises services. The on- premises services are accessible through the use of hostnames that reside in the company example DNS zone. This DNS zone is wholly hosted on premises and is available only on the company\\'s private network.

A solutions architect must ensure that the new service can resolve hostnames on the company.example domain to integrate with existing services.

Which solution meets these requirements?

A. Create an empty private zone in Amazon Route 53 for company.example. Add an additional NS record to the company\\'s on-premises company.example zone that points to the authoritative name servers for the new private zone in Route

B. Turn on DNS hostnames for the VPC. Configure a new outbound endpoint with Amazon Route 53 Resolver. Create a Resolver rule to forward requests for company.example to the on-premises name servers.

C. Turn on DNS hostnames for the VPC. Configure a new inbound resolver endpoint with Amazon Route 53 Resolver. Configure the on-premises DNS server to forward requests for company.example to the new resolver.

D. Use AWS Systems Manager to configure a run document that will install a hosts file that contains any required hostnames. Use an Amazon Event8ndge (Amazon CloudWatch Events) rule lo run the document when an instance is entering the running state.

Correct Answer: B

https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/resolver.html

QUESTION 15

A travel company built a web application that uses Amazon Simple Email Service (Amazon SES) to send email notifications to users. The company needs to enable logging to help troubleshoot email delivery issues. The company also needs

the ability to do searches that are based on recipient, subject, and time sent.

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

A. Create an Amazon SES configuration set with Amazon Kinesis Data Firehose as the destination. Choose to send logs to an Amazon S3 bucket.

B. Enable AWS CloudTrail logging. Specify an Amazon S3 bucket as the destination for the logs.

C. Use Amazon Athena to query the fogs in the Amazon S3 bucket for recipient, subject, and time sent.

D. Create an Amazon CloudWatch log group. Configure Amazon SES to send logs to the log group

E. Use Amazon Athena to query the logs in Amazon CloudWatch for recipient, subject, and time sent.

Correct Answer: AC

https://docs.aws.amazon.com/ses/latest/dg/event-publishing-retrieving- firehose.html To enable you to track your email sending at a granular level, you can set up Amazon SES to publish email sending events to Amazon CloudWatch, Amazon Kinesis Data Firehose, or Amazon Simple Notification Service based on characteristics that you define.https://docs.aws.amazon.com/ses/latest/dg/monitor-using-event-publishing.html https://aws.amazon.com/getting-started/hands-on/build-serverless-real-time-data- processing-app-lambda-kinesis-s3-dynamodbcognito-athena/4/#:~:text=Amazon%20Athena%20allows%20us%20to,to%20an%20Amazon%20S3%20bucket.

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