1] A company collects data for temperature, humidity, and atmospheric pressure in cities across multiple continents. The average volume of data that the company collects from each site daily is 500 GB. Each site has a high-speed Internet connection.

The company wants to aggregate the data from all these global sites as quickly as possible in a single Amazon S3 bucket. The solution must minimize operational complexity.

Which solution meets these requirements

ans- Turn on S3 Transfer Acceleration on the destination S3 bucket. Use multipart uploads to directly upload site data to the destination S3 bucket.

General line: Collect huge amount of the files across multiple continents

Conditions: High speed Internet connectivity

Task: aggregate the data from all in a single S3 bucket

Requirements: as quick as possible, minimize operational complexity

Correct answer A: S3 Transfer Acceleration because:

- ideally works with objects for long-distance transfer (uses Edge Locations)

- can speed up content transfers to and from S3 as much as 50-500%

- use cases: mobile & web application uploads and downloads, distributed office transfers, data exchange with trusted partners. Generally for sharing of large data sets between companies, customers can set up special access to their S3 buckets with accelerated uploads to speed data exchanges and the pace of innovation.

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2]A company needs the ability to analyze the log files of its proprietary application. The logs are stored in JSON format in an Amazon S3 bucket. Queries will be simple and will run on-demand. A solutions architect needs to perform the analysis with minimal changes to the existing architecture.

What should the solutions architect do to meet these requirements with the LEAST amount of operational overhead?

ans-Use Amazon Athena directly with Amazon S3 to run the queries as needed.

Amazon Athena is an interactive query service that makes it easy to analyze data directly in Amazon Simple Storage Service (Amazon S3) using standard SQL. With a few actions in the AWS Management Console, you can point Athena at your data stored in Amazon S3 and begin using standard SQL to run ad-hoc queries and get results in seconds.

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3]A company uses AWS Organizations to manage multiple AWS accounts for different departments. The management account has an Amazon S3 bucket that contains project reports. The company wants to limit access to this S3 bucket to only users of accounts within the organization in AWS Organizations.

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

ans-. Add the aws PrincipalOrgID global condition key with a reference to the organization ID to the S3 bucket policy.

aws:PrincipalOrgID – Simplifies specifying the Principal element in a resource-based policy. This global key provides an alternative to listing all the account IDs for all AWS accounts in an organization. Instead of listing all of the accounts that are members of an organization, you can specify the organization ID in the Condition element.

proposes adding the aws PrincipalOrgID global condition key with a reference to the organization ID to the S3 bucket policy. This would limit access to the S3 bucket to only users of accounts within the organization in AWS Organizations, as the aws PrincipalOrgID condition key can check if the request is coming from within the organization.

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4]An application runs on an Amazon EC2 instance in a VPC. The application processes logs that are stored in an Amazon S3 bucket. The EC2 instance needs to access the S3 bucket without connectivity to the internet.

Which solution will provide private network connectivity to Amazon S3?

A. Create a gateway VPC endpoint to the S3 bucket.

Keywords:

- EC2 in VPC

- EC2 instance needs to access the S3 bucket without connectivity to the internet

VPC endpoint allows you to connect to AWS services using a private network instead of using the public Internet.

With a gateway endpoint, you can access Amazon S3 from your VPC, without requiring an internet gateway or NAT device for your VPC, and with no additional cost. However, gateway endpoints do not allow access from on-premises networks, from peered VPCs in other AWS Regions, or through a transit gateway.

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5]A company is hosting a web application on AWS using a single Amazon EC2 instance that stores user-uploaded documents in an Amazon EBS volume. For better scalability and availability, the company duplicated the architecture and created a second EC2 instance and EBS volume in another Availability Zone, placing both behind an Application Load Balancer. After completing this change, users reported that, each time they refreshed the website, they could see one subset of their documents or the other, but never all of the documents at the same time.

What should a solutions architect propose to ensure users see all of their documents at once?

C. Copy the data from both EBS volumes to Amazon EFS. Modify the application to save new documents to Amazon EFS

Option C, which involves copying the data to Amazon EFS and modifying the application to use Amazon EFS for document storage, is the most appropriate solution to ensure users can see all their documents at once in the duplicated architecture. Amazon EFS provides scalability, availability, and shared access, allowing both EC2 instances to access and synchronize the documents seamlessly.

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6]A company uses NFS to store large video files in on-premises network attached storage. Each video file ranges in size from 1 MB to 500 GB. The total storage is 70 TB and is no longer growing. The company decides to migrate the video files to Amazon S3. The company must migrate the video files as soon as possible while using the least possible network bandwidth.

Which solution will meet these requirements?

B Create an AWS Snowball Edge job. Receive a Snowball Edge device on premises. Use the Snowball Edge client to transfer data to the device. Return the device so that AWS can import the data into Amazon S3

On a Snowball Edge device you can copy files with a speed of up to 100Gbps. 70TB will take around 5600 seconds, so very quickly, less than 2 hours. The downside is that it'll take between 4-6 working days to receive the device and then another 2-3 working days to send it back and for AWS to move the data onto S3 once it reaches them. Total time: 6-9 working days. Bandwidth used: 0.

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7] A company has an application that ingests incoming messages. Dozens of other applications and microservices then quickly consume these messages. The number of messages varies drastically and sometimes increases suddenly to 100,000 each second. The company wants to decouple the solution and increase scalability.

Which solution meets these requirements?

D. Publish the messages to an Amazon Simple Notification Service (Amazon SNS) topic with multiple Amazon Simple Queue Service (Amazon SOS) subscriptions. Configure the consumer applications to process the messages from the queues.

an SQS queue can handle a maximum of 3,000 messages per second. However, you can request higher throughput by contacting AWS Support. AWS can increase the message throughput for your queue beyond the default limits in increments of 300 messages per second, up to a maximum of 10,000 messages per second.

It's important to note that the maximum number of messages per second that a queue can handle is not the same as the maximum number of requests per second that the SQS API can handle. The SQS API is designed to handle a high volume of requests per second, so it can be used to send messages to your queue at a rate that exceeds the maximum message throughput of the queue.

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8] A company is migrating a distributed application to AWS. The application serves variable workloads. The legacy platform consists of a primary server that coordinates jobs across multiple compute nodes. The company wants to modernize the application with a solution that maximizes resiliency and scalability.

How should a solutions architect design the architecture to meet these requirements?

B. Configure an Amazon Simple Queue Service (Amazon SQS) queue as a destination for the jobs. Implement the compute nodes with Amazon EC2 instances that are managed in an Auto Scaling group. Configure EC2 Auto Scaling based on the size of the queue.

Option B: This option provides a decoupled architecture where the jobs are sent to an SQS queue. The compute nodes (EC2 instances in an Auto Scaling group) can then process these jobs. Scaling based on the size of the SQS queue (the number of messages) allows the architecture to adapt to variable workloads, scaling out when the queue depth increases and scaling in when the depth decreases.

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9] A company is running an SMB file server in its data center. The file server stores large files that are accessed frequently for the first few days after the files are created. After 7 days the files are rarely accessed.

The total data size is increasing and is close to the company's total storage capacity. A solutions architect must increase the company's available storage space without losing low-latency access to the most recently accessed files. The solutions architect must also provide file lifecycle management to avoid future storage issues.

Which solution will meet these requirements?

B. Create an Amazon S3 File Gateway to extend the company's storage space. Create an S3 Lifecycle policy to transition the data to S3 Glacier Deep Archive after 7 days.

ption B: Amazon S3 File Gateway provides a hybrid cloud storage solution, integrating on-premises environments with cloud storage. Files written to the file share are automatically saved as S3 objects. With S3 Lifecycle policies, you can transition objects between storage classes. Transitioning to Glacier Deep Archive is suitable for rarely accessed files. This solution addresses both the storage capacity and lifecycle management requirements.

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10] A company is building an ecommerce web application on AWS. The application sends information about new orders to an Amazon API Gateway REST API to process. The company wants to ensure that orders are processed in the order that they are received.

Which solution will meet these requirements?

B. Use an API Gateway integration to send a message to an Amazon Simple Queue Service (Amazon SQS) FIFO queue when the application receives an order. Configure the SQS FIFO queue to invoke an AWS Lambda function for processing

Use an API Gateway integration to send a message to an Amazon Simple Queue Service (Amazon SQS) FIFO queue when the application receives an order. Configure the SQS FIFO queue to invoke an AWS Lambda function for processing.

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11] A company has an application that runs on Amazon EC2 instances and uses an Amazon Aurora database. The EC2 instances connect to the database by using user names and passwords that are stored locally in a file. The company wants to minimize the operational overhead of credential management.

What should a solutions architect do to accomplish this goal?

A. Use AWS Secrets Manager. Turn on automatic rotation.

AWS Secrets Manager is a secrets management service that helps you protect access to your applications, services, and IT resources. This service enables you to rotate, manage, and retrieve database credentials, API keys, and other secrets throughout their lifecycle.

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12] A global company hosts its web application on Amazon EC2 instances behind an Application Load Balancer (ALB). The web application has static data and dynamic data. The company stores its static data in an Amazon S3 bucket. The company wants to improve performance and reduce latency for the static data and dynamic data. The company is using its own domain name registered with Amazon Route 53.

What should a solutions architect do to meet these requirements?

A. Create an Amazon CloudFront distribution that has the S3 bucket and the ALB as origins. Configure Route 53 to route traffic to the CloudFront distribution.

CloudFront with Multiple Origins: CloudFront allows you to set up multiple origins for your distribution, so you can use both the ALB (for dynamic content) and the S3 bucket (for static content) as origins. This means that both your dynamic and static content can be served through CloudFront, which will cache content at edge locations to reduce latency.

Route 53 Integration with CloudFront: Amazon Route 53 can be easily configured to route traffic for your domain to a CloudFront distribution. Users will access your domain, and Route 53 will direct them to the nearest CloudFront edge location.

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13] A company performs monthly maintenance on its AWS infrastructure. During these maintenance activities, the company needs to rotate the credentials for its Amazon RDS for MySQL databases across multiple AWS Regions.

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

A. Store the credentials as secrets in AWS Secrets Manager. Use multi-Region secret replication for the required Regions. Configure Secrets Manager to rotate the secrets on a schedule.

AWS Secrets Manager allows you to store, manage, and rotate secrets, such as database credentials, across multiple AWS Regions. By enabling multi-Region secret replication, you can replicate the secrets across the required Regions to allow for seamless rotation of the credentials during maintenance activities. Additionally, Secrets Manager provides automatic rotation of secrets on a schedule, which would minimize the operational overhead of rotating the credentials on a monthly basis.

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14] A company runs an ecommerce application on Amazon EC2 instances behind an Application Load Balancer. The instances run in an Amazon EC2 Auto Scaling group across multiple Availability Zones. The Auto Scaling group scales based on CPU utilization metrics. The ecommerce application stores the transaction data in a MySQL 8.0 database that is hosted on a large EC2 instance.

The database's performance degrades quickly as application load increases. The application handles more read requests than write transactions. The company wants a solution that will automatically scale the database to meet the demand of unpredictable read workloads while maintaining high availability.

Which solution will meet these requirements?

C. Use Amazon Aurora with a Multi-AZ deployment. Configure Aurora Auto Scaling with Aurora Replicas.

Option C: Using Amazon Aurora with a Multi-AZ deployment and configuring Aurora Auto Scaling with Aurora Replicas is the most appropriate solution. Aurora is a MySQL-compatible relational database engine that provides high performance and scalability. With Multi-AZ deployment, the database is automatically replicated across multiple Availability Zones for high availability.

Aurora Auto Scaling allows the database to automatically add or remove Aurora Replicas based on the workload, ensuring that read requests can be distributed effectively and the database can scale to meet demand. This provides both high availability and automatic scaling to handle unpredictable read workloads.

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15] A company recently migrated to AWS and wants to implement a solution to protect the traffic that flows in and out of the production VPC. The company had an inspection server in its on-premises data center. The inspection server performed specific operations such as traffic flow inspection and traffic filtering. The company wants to have the same functionalities in the AWS Cloud.

Which solution will meet these requirements?

C. Use AWS Network Firewall to create the required rules for traffic inspection and traffic filtering for the production VPC.

AWS Network Firewall is a managed firewall service that provides filtering for both inbound and outbound network traffic. It allows you to create rules for traffic inspection and filtering, which can help protect your production VPC

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16] A company hosts a data lake on AWS. The data lake consists of data in Amazon S3 and Amazon RDS for PostgreSQL. The company needs a reporting solution that provides data visualization and includes all the data sources within the data lake. Only the company's management team should have full access to all the visualizations. The rest of the company should have only limited access.

Which solution will meet these requirements?

B. Create an analysis in Amazon QuickSight. Connect all the data sources and create new datasets. Publish dashboards to visualize the data. Share the dashboards with the appropriate users and groups

using Amazon QuickSight, which is a business intelligence tool provided by AWS for data visualization and reporting. With this option, you can connect all the data sources within the data lake, including Amazon S3 and Amazon RDS for PostgreSQL. You can create datasets within QuickSight that pull data from these sources.

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17] A company is implementing a new business application. The application runs on two Amazon EC2 instances and uses an Amazon S3 bucket for document storage. A solutions architect needs to ensure that the EC2 instances can access the S3 bucket.

What should the solutions architect do to meet this requirement?

A. Create an IAM role that grants access to the S3 bucket. Attach the role to the EC2 instances

An IAM role is an AWS resource that allows you to delegate access to AWS resources and services. You can create an IAM role that grants access to the S3 bucket and then attach the role to the EC2 instances. This will allow the EC2 instances to access the S3 bucket and the documents stored within it.

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18] An application development team is designing a microservice that will convert large images to smaller, compressed images. When a user uploads an image through the web interface, the microservice should store the image in an Amazon S3 bucket, process and compress the image with an AWS Lambda function, and store the image in its compressed form in a different S3 bucket.

A solutions architect needs to design a solution that uses durable, stateless components to process the images automatically.

Which combination of actions will meet these requirements? (Choose two.)

A. Create an Amazon Simple Queue Service (Amazon SQS) queue. Configure the S3 bucket to send a notification to the SQS queue when an image is uploaded to the S3 bucket.

B. Configure the Lambda function to use the Amazon Simple Queue Service (Amazon SQS) queue as the invocation source. When the SQS message is successfully processed, delete the message in the queue

Option A: By creating an Amazon SQS queue and configuring the S3 bucket to send a notification to the SQS queue when an image is uploaded, the system establishes a durable and scalable way to handle incoming image processing tasks.

Option B: Configuring the Lambda function to use the SQS queue as the invocation source allows it to retrieve messages from the queue and process them in a stateless manner. After successfully processing the image, the Lambda function can delete the message from the queue to avoid duplicate processing.

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19] A company has a three-tier web application that is deployed on AWS. The web servers are deployed in a public subnet in a VPC. The application servers and database servers are deployed in private subnets in the same VPC. The company has deployed a third-party virtual firewall appliance from AWS Marketplace in an inspection VPC. The appliance is configured with an IP interface that can accept IP packets.

A solutions architect needs to integrate the web application with the appliance to inspect all traffic to the application before the traffic reaches the web server.

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

Deploy a Gateway Load Balancer in the inspection VPC. Create a Gateway Load Balancer endpoint to receive the incoming packets and forward the packets to the appliance.

Gateway Load Balancer is a new type of load balancer that operates at layer 3 of the OSI model and is built on Hyperplane, which is capable of handling several thousands of connections per second. Gateway Load Balancer endpoints are configured in spoke VPCs originating or receiving traffic from the Internet. This architecture allows you to perform inline inspection of traffic from multiple spoke VPCs in a simplified and scalable fashion while still centralizing your virtual appliances.

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20] A company wants to improve its ability to clone large amounts of production data into a test environment in the same AWS Region. The data is stored in Amazon EC2 instances on Amazon Elastic Block Store (Amazon EBS) volumes. Modifications to the cloned data must not affect the production environment. The software that accesses this data requires consistently high I/O performance.

A solutions architect needs to minimize the time that is required to clone the production data into the test environment.

Which solution will meet these requirements?

Take EBS snapshots of the production EBS volumes. Turn on the EBS fast snapshot restore feature on the EBS snapshots. Restore the snapshots into new EBS volumes. Attach the new EBS volumes to EC2 instances in the test environment

Amazon EBS fast snapshot restore (FSR) enables you to create a volume from a snapshot that is fully initialized at creation. This eliminates the latency of I/O operations on a block when it is accessed for the first time. Volumes that are created using fast snapshot restore instantly deliver all of their provisioned performance

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21]An ecommerce company wants to launch a one-deal-a-day website on AWS. Each day will feature exactly one product on sale for a period of 24 hours. The company wants to be able to handle millions of requests each hour with millisecond latency during peak hours.

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

D. Use an Amazon S3 bucket to host the website's static content. Deploy an Amazon CloudFront distribution. Set the S3 bucket as the origin. Use Amazon API Gateway and AWS Lambda functions for the backend APIs. Store the data in Amazon DynamoDB.

Use an Amazon S3 bucket to host the website's static content, deploy an Amazon CloudFront distribution, set the S3 bucket as the origin, and use Amazon API Gateway and AWS Lambda functions for the backend APIs. Store the data in Amazon DynamoDB.

Using Amazon S3 to host static content and Amazon CloudFront to distribute the content can provide high performance and scale for websites with millions of requests each hour. Amazon API Gateway and AWS Lambda can be used to build scalable and highly available backend APIs to support the website, and Amazon DynamoDB can be used to store the data. This solution requires minimal operational overhead as it leverages fully managed services that automatically scale to meet demand.

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22] A solutions architect is using Amazon S3 to design the storage architecture of a new digital media application. The media files must be resilient to the loss of an Availability Zone. Some files are accessed frequently while other files are rarely accessed in an unpredictable pattern. The solutions architect must minimize the costs of storing and retrieving the media files.

Which storage option meets these requirements?

B. S3 Intelligent-Tiering

Amazon S3 Intelligent Tiering is a storage class that automatically moves data to the most cost-effective storage tier based on access patterns. It can store objects in two access tiers: the frequent access tier and the infrequent access tier. The frequent access tier is optimized for frequently accessed objects and is charged at the same rate as S3 Standard. The infrequent access tier is optimized for objects that are not accessed frequently and are charged at a lower rate than S3 Standard.

S3 Intelligent Tiering is a good choice for storing media files that are accessed frequently and infrequently in an unpredictable pattern because it automatically moves data to the most cost-effective storage tier based on access patterns, minimizing storage and retrieval costs. It is also resilient to the loss of an Availability Zone because it stores objects in multiple Availability Zones within a region.

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23] A company is storing backup files by using Amazon S3 Standard storage. The files are accessed frequently for 1 month. However, the files are not accessed after 1 month. The company must keep the files indefinitely.

Which storage solution will meet these requirements MOST cost-effectively?

B. Create an S3 Lifecycle configuration to transition objects from S3 Standard to S3 Glacier Deep Archive after 1 month.

Amazon S3 Glacier Deep Archive is a secure, durable, and extremely low-cost Amazon S3 storage class for long-term retention of data that is rarely accessed and for which retrieval times of several hours are acceptable. It is the lowest-cost storage option in Amazon S3, making it a cost-effective choice for storing backup files that are not accessed after 1 month.

You can use an S3 Lifecycle configuration to automatically transition objects from S3 Standard to S3 Glacier Deep Archive after 1 month. This will minimize the storage costs for the backup files that are not accessed frequently.

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24] A company observes an increase in Amazon EC2 costs in its most recent bill. The billing team notices unwanted vertical scaling of instance types for a couple of EC2 instances. A solutions architect needs to create a graph comparing the last 2 months of EC2 costs and perform an in-depth analysis to identify the root cause of the vertical scaling.

How should the solutions architect generate the information with the LEAST operational overhead?

B. Use Cost Explorer's granular filtering feature to perform an in-depth analysis of EC2 costs based on instance types.

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25] A company is designing an application. The application uses an AWS Lambda function to receive information through Amazon API Gateway and to store the information in an Amazon Aurora PostgreSQL database.

During the proof-of-concept stage, the company has to increase the Lambda quotas significantly to handle the high volumes of data that the company needs to load into the database. A solutions architect must recommend a new design to improve scalability and minimize the configuration effort.

Which solution will meet these requirements?

D. Set up two Lambda functions. Configure one function to receive the information. Configure the other function to load the information into the database. Integrate the Lambda functions by using an Amazon Simple Queue Service (Amazon SQS) queue.

"By dividing the functionality into two Lambda functions, one for receiving the information and the other for loading it into the database, you can independently scale and optimize each function based on their specific requirements. This approach allows for more efficient resource allocation and reduces the potential impact of high volumes of data on the overall system.

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26] A company needs to review its AWS Cloud deployment to ensure that its Amazon S3 buckets do not have unauthorized configuration changes.

What should a solutions architect do to accomplish this goal?

A. Turn on AWS Config with the appropriate rules.

AWS Config is a service that enables you to assess, audit, and evaluate the configurations of your AWS resources. You can use AWS Config to monitor and record changes to the configuration of your Amazon S3 buckets. By turning on AWS Config and enabling the appropriate rules, you can ensure that your S3 buckets do not have unauthorized configuration changes.

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27] A company is launching a new application and will display application metrics on an Amazon CloudWatch dashboard. The company's product manager needs to access this dashboard periodically. The product manager does not have an AWS account. A solutions architect must provide access to the product manager by following the principle of least privilege.

Which solution will meet these requirements?

A. Share the dashboard from the CloudWatch console. Enter the product manager's email address, and complete the sharing steps. Provide a shareable link for the dashboard to the product manage.

Share a single dashboard and designate specific email addresses of the people who can view the dashboard. Each of these users creates their own password that they must enter to view the dashboard.

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28] A company is migrating applications to AWS. The applications are deployed in different accounts. The company manages the accounts centrally by using AWS Organizations. The company's security team needs a single sign-on (SSO) solution across all the company's accounts. The company must continue managing the users and groups in its on-premises self-managed Microsoft Active Directory.

Which solution will meet these requirements?

A. Enable AWS Single Sign-On (AWS SSO) from the AWS SSO console. Create a one-way forest trust or a one-way domain trust to connect the company's self-managed Microsoft Active Directory with AWS SSO by using AWS Directory Service for Microsoft Active Directory.

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29] A company provides a Voice over Internet Protocol (VoIP) service that uses UDP connections. The service consists of Amazon EC2 instances that run in an Auto Scaling group. The company has deployments across multiple AWS Regions.

The company needs to route users to the Region with the lowest latency. The company also needs automated failover between Regions.

Which solution will meet these requirements?

A. Deploy a Network Load Balancer (NLB) and an associated target group. Associate the target group with the Auto Scaling group. Use the NLB as an AWS Global Accelerator endpoint in each Region.

nswer A does not mention service Global Accelerator, it mentions the NLB would act like one. Not sure if the wording is wrong or not.

' Deploy a Network Load Balancer (NLB) and an associated target group. Associate the target group with the Auto Scaling group. Use the NLB as an AWS Global Accelerator endpoint in each Region.

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30] A development team runs monthly resource-intensive tests on its general purpose Amazon RDS for MySQL DB instance with Performance Insights enabled. The testing lasts for 48 hours once a month and is the only process that uses the database. The team wants to reduce the cost of running the tests without reducing the compute and memory attributes of the DB instance.

Which solution meets these requirements MOST cost-effectively?

C. Create a snapshot when tests are completed. Terminate the DB instance and restore the snapshot when required.

By creating a snapshot and terminating the DB instance, you effectively stop incurring costs for the running instance. When you need to run the tests again, you can restore the snapshot to create a new instance and resume testing. This approach allows you to save costs during the periods when the tests are not running.

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31] A company that hosts its web application on AWS wants to ensure all Amazon EC2 instances. Amazon RDS DB instances. and Amazon Redshift clusters are configured with tags. The company wants to minimize the effort of configuring and operating this check.

What should a solutions architect do to accomplish this?

A. Use AWS Config rules to define and detect resources that are not properly tagged.

Yes, you can use AWS Config to create tags for your resources. AWS Config is a service that enables you to assess, audit, and evaluate the configurations of your AWS resources. You can use AWS Config to create rules that automatically tag resources when they are created or when their configurations change.

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32] A development team needs to host a website that will be accessed by other teams. The website contents consist of HTML, CSS, client-side JavaScript, and images.

Which method is the MOST cost-effective for hosting the website?

B. Create an Amazon S3 bucket and host the website there.

The MOST cost-effective method for hosting a website is to:

Create an Amazon S3 bucket and host the website there.

Amazon S3 is a highly scalable and cost-effective object storage service. It is a good option for hosting static websites, such as the website in this scenario.C is the best solution for the following reasons:

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33] A company runs an online marketplace web application on AWS. The application serves hundreds of thousands of users during peak hours. The company needs a scalable, near-real-time solution to share the details of millions of financial transactions with several other internal applications. Transactions also need to be processed to remove sensitive data before being stored in a document database for low-latency retrieval.

What should a solutions architect recommend to meet these requirements?

C. Stream the transactions data into Amazon Kinesis Data Streams. Use AWS Lambda integration to remove sensitive data from every transaction and then store the transactions data in Amazon DynamoDB. Other applications can consume the transactions data off the Kinesis data stream.

1. Real-time Data Stream: To share millions of financial transactions with other apps, you need to be able to ingest data in real-time, which is made possible by Amazon Kinesis Data Streams.

2. Data Transformation: You can cleanse and eliminate sensitive data from transactions before storing them in Amazon DynamoDB by utilizing AWS Lambda with Kinesis Data Streams. This takes care of the requirement to handle sensitive data with care.

3. Scalability: DynamoDB and Amazon Kinesis are both extremely scalable technologies that can manage enormous data volumes and adjust to the workload.

To host a static website on Amazon S3, you would first need to create an S3 bucket. Then, you would need to upload the website files to the bucket. Once the files are uploaded, you can configure the bucket to serve as a website.

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34] A company hosts its multi-tier applications on AWS. For compliance, governance, auditing, and security, the company must track configuration changes on its AWS resources and record a history of API calls made to these resources.

What should a solutions architect do to meet these requirements?

B. Use AWS Config to track configuration changes and AWS CloudTrail to record API calls.

AWS Config for Configuration Changes: AWS Config is a service that tracks changes to resource configurations over time. It provides a history of configuration changes to your AWS resources and helps with compliance and auditing by allowing you to assess how resource configurations have changed over time.

AWS CloudTrail for API Calls: AWS CloudTrail is designed specifically for recording API calls made to AWS resources. It captures detailed information about who made each API call, the actions taken, and the resources affected. This is essential for auditing and security purposes.

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35] A company is preparing to launch a public-facing web application in the AWS Cloud. The architecture consists of Amazon EC2 instances within a VPC behind an Elastic Load Balancer (ELB). A third-party service is used for the DNS. The company's solutions architect must recommend a solution to detect and protect against large-scale DDoS attacks.

Which solution meets these requirements?

D. Enable AWS Shield Advanced and assign the ELB to it.

AWS Shield Advanced provides expanded DDoS attack protection for your Amazon EC2 instances, Elastic Load Balancing load balancers, CloudFront distributions, Route 53 hosted zones, and AWS Global Accelerator standard accelerators.

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36]

37] A company recently launched a variety of new workloads on Amazon EC2 instances in its AWS account. The company needs to create a strategy to access and administer the instances remotely and securely. The company needs to implement a repeatable process that works with native AWS services and follows the AWS Well-Architected Framework.

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

B. Attach the appropriate IAM role to each existing instance and new instance. Use AWS Systems Manager Session Manager to establish a remote SSH session.

With AWS Systems Manager Session Manager, you can manage your Amazon Elastic Compute Cloud (Amazon EC2) instances, edge devices, on-premises servers, and virtual machines (VMs). You can use either an interactive one-click browser-based shell or the AWS Command Line Interface (AWS CLI). It provides secure and auditable node management without the need to open inbound ports, maintain bastion hosts, or manage SSH keys.

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38] A company is hosting a static website on Amazon S3 and is using Amazon Route 53 for DNS. The website is experiencing increased demand from around the world. The company must decrease latency for users who access the website.

Which solution meets these requirements MOST cost-effectively?

C. Add an Amazon CloudFront distribution in front of the S3 bucket. Edit the Route 53 entries to point to the CloudFront distribution

Amazon CloudFront is a content delivery network (CDN) service that distributes content globally to reduce latency. By setting up a CloudFront distribution in front of the S3 bucket hosting the static website, you can take advantage of its edge locations around the world to deliver content from the nearest location to the users, reducing the latency they experience.

CloudFront automatically caches and replicates content to its edge locations, resulting in faster delivery and lower latency for users worldwide. This solution is highly effective in optimizing performance while keeping costs under control because CloudFront charges are based on actual data transfer and requests, and the pay-as-you-go pricing model ensures that you only pay for what you use.

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39] A company maintains a searchable repository of items on its website. The data is stored in an Amazon RDS for MySQL database table that contains more than 10 million rows. The database has 2 TB of General Purpose SSD storage. There are millions of updates against this data every day through the company's website.

The company has noticed that some insert operations are taking 10 seconds or longer. The company has determined that the database storage performance is the problem.

Which solution addresses this performance issue?

A. Change the storage type to Provisioned IOPS SSD.

Using Amazon Provisioned IOPS (PIOPS) SSD storage is the best way to solve the performance issue of insert operations taking 10 seconds or longer on an Amazon RDS for MySQL database table with more than 10 million rows and 2 TB of General Purpose SSD storage.

A high-performance storage solution with reliable throughput and minimal latency is PIOPS SSD storage. Workloads like insert operations, which demand high I/O performance, are ideally suited for it.

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40] A company has thousands of edge devices that collectively generate 1 TB of status alerts each day. Each alert is approximately 2 KB in size. A solutions architect needs to implement a solution to ingest and store the alerts for future analysis.

The company wants a highly available solution. However, the company needs to minimize costs and does not want to manage additional infrastructure. Additionally, the company wants to keep 14 days of data available for immediate analysis and archive any data older than 14 days.

What is the MOST operationally efficient solution that meets these requirements?

A. Create an Amazon Kinesis Data Firehose delivery stream to ingest the alerts. Configure the Kinesis Data Firehose stream to deliver the alerts to an Amazon S3 bucket. Set up an S3 Lifecycle configuration to transition data to Amazon S3 Glacier after 14 days.

Amazon Kinesis Data Firehose is a fully managed service that can capture, transform, and deliver streaming data into storage systems or analytics tools, making it an ideal solution for ingesting and storing status alerts. In this solution, the Kinesis Data Firehose delivery stream ingests the alerts and delivers them to an S3 bucket, which is a cost-effective storage solution. An S3 Lifecycle configuration is set up to transition the data to Amazon S3 Glacier after 14 days to minimize storage costs.

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41] A company's application integrates with multiple software-as-a-service (SaaS) sources for data collection. The company runs Amazon EC2 instances to receive the data and to upload the data to an Amazon S3 bucket for analysis. The same EC2 instance that receives and uploads the data also sends a notification to the user when an upload is complete. The company has noticed slow application performance and wants to improve the performance as much as possible.

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

B. Create an Amazon AppFlow flow to transfer data between each SaaS source and the S3 bucket. Configure an S3 event notification to send events to an Amazon Simple Notification Service (Amazon SNS) topic when the upload to the S3 bucket is complete.

Amazon AppFlow is a fully-managed integration service that enables you to securely exchange data between software as a service (SaaS) applications, such as Salesforce, and AWS services, such as Amazon Simple Storage Service (Amazon S3) and Amazon Redshift.

The use of Appflow helps to remove the ec2 as the middle layer which slows down the process of data transmission and introduce an additional variable.

Appflow is also a fully managed AWS service, thus reducing the operational overhead.

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42] A company runs a highly available image-processing application on Amazon EC2 instances in a single VPC. The EC2 instances run inside several subnets across multiple Availability Zones. The EC2 instances do not communicate with each other. However, the EC2 instances download images from Amazon S3 and upload images to Amazon S3 through a single NAT gateway. The company is concerned about data transfer charges.

What is the MOST cost-effective way for the company to avoid Regional data transfer charges?

C. Deploy a gateway VPC endpoint for Amazon S3.

S3 VPC endpoint provides a way for an S3 request to be routed through to the Amazon S3 service, without having to connect a subnet to an internet gateway. The S3 VPC endpoint is what's known as a gateway endpoint.

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43] A company has an on-premises application that generates a large amount of time-sensitive data that is backed up to Amazon S3. The application has grown and there are user complaints about internet bandwidth limitations. A solutions architect needs to design a long-term solution that allows for both timely backups to Amazon S3 and with minimal impact on internet connectivity for internal users.

Which solution meets these requirements?

B. Establish a new AWS Direct Connect connection and direct backup traffic through this new connection.

AWS Direct Connect is a network service that allows you to establish a dedicated network connection from your on-premises data center to AWS. This connection bypasses the public Internet and can provide more reliable, lower-latency communication between your on-premises application and Amazon S3. By directing backup traffic through the AWS Direct Connect connection, you can minimize the impact on your internet bandwidth and ensure timely backups to S3.

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44] A company has an Amazon S3 bucket that contains critical data. The company must protect the data from accidental deletion.

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

A. Enable versioning on the S3 bucket

B. Enable MFA Delete on the S3 bucket

The two most effective steps a solutions architect can take to protect an Amazon S3 bucket from accidental deletion are:

A. Enable versioning on the S3 bucket.

B. Enable MFA Delete on the S3 bucket.

Versioning keeps multiple versions of objects in the S3 bucket, even when they are overwritten or deleted. This allows you to recover objects that have been accidentally deleted.

MFA Delete requires you to enter a one-time password from a multi-factor authentication (MFA) device before you can delete an object in the S3 bucket. This helps to prevent accidental deletions.

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45] A company has a data ingestion workflow that consists of the following:

• An Amazon Simple Notification Service (Amazon SNS) topic for notifications about new data deliveries

• An AWS Lambda function to process the data and record metadata

The company observes that the ingestion workflow fails occasionally because of network connectivity issues. When such a failure occurs, the Lambda function does not ingest the corresponding data unless the company manually reruns the job.

Which combination of actions should a solutions architect take to ensure that the Lambda function ingests all data in the future? (Choose two.)

B. Create an Amazon Simple Queue Service (Amazon SQS) queue, and subscribe it to the SNS topic.

E. Modify the Lambda function to read from an Amazon Simple Queue Service (Amazon SQS) queue.

B. Create an Amazon Simple Queue Service (Amazon SQS) queue, and subscribe it to the SNS topic. This will decouple the ingestion workflow and provide a buffer to temporarily store the data in case of network connectivity issues.

E. Modify the Lambda function to read from an Amazon Simple Queue Service (Amazon SQS) queue. This will allow the Lambda function to process the data from the SQS queue at its own pace, decoupling the data ingestion from the data delivery and providing more flexibility and fault tolerance.

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46] A company has an application that provides marketing services to stores. The services are based on previous purchases by store customers. The stores upload transaction data to the company through SFTP, and the data is processed and analyzed to generate new marketing offers. Some of the files can exceed 200 GB in size.

Recently, the company discovered that some of the stores have uploaded files that contain personally identifiable information (PII) that should not have been included. The company wants administrators to be alerted if PII is shared again. The company also wants to automate remediation.

What should a solutions architect do to meet these requirements with the LEAST development effort?

B. Use an Amazon S3 bucket as a secure transfer point. Use Amazon Macie to scan the objects in the bucket. If objects contain PII, use Amazon Simple Notification Service (Amazon SNS) to trigger a notification to the administrators to remove the objects that contain PII.

Some quotas can be increased, while others cannot. To request an increase to a quota, use the Service Quotas console. To learn how to request an increase, see Requesting a quota increase in the Service Quotas User Guide. If a quota isn't available on the Service Quotas console, use the service limit increase form on the AWS Support Center Console to request an increase to the quota.

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47] A company needs guaranteed Amazon EC2 capacity in three specific Availability Zones in a specific AWS Region for an upcoming event that will last 1 week.

What should the company do to guarantee the EC2 capacity?

D. Create an On-Demand Capacity Reservation that specifies the Region and three Availability Zones needed.

An On-Demand Capacity Reservation is a type of Amazon EC2 reservation that enables you to create and manage reserved capacity on Amazon EC2. With an On-Demand Capacity Reservation, you can specify the Region and Availability Zones where you want to reserve capacity, and the number of EC2 instances you want to reserve. This allows you to guarantee capacity in specific Availability Zones in a specific Region.

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48] A company's website uses an Amazon EC2 instance store for its catalog of items. The company wants to make sure that the catalog is highly available and that the catalog is stored in a durable location.

What should a solutions architect do to meet these requirements?

A. Move the catalog to Amazon ElastiCache for Redis.

Redis can manage its durability using its AOF persistence which allows logging changes of the catalog data and can be replayed, even in the event of failure. As for the availability, Redis also allows replication, so if one fails, another is still working. Considering this question isn't about sharing file systems between instances and rather a customer wants to access a catalog, option A seems to be more suitable option here.

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49] A company stores call transcript files on a monthly basis. Users access the files randomly within 1 year of the call, but users access the files infrequently after 1 year. The company wants to optimize its solution by giving users the ability to query and retrieve files that are less than 1-year-old as quickly as possible. A delay in retrieving older files is acceptable.

Which solution will meet these requirements MOST cost-effectively?

B. Store individual files in Amazon S3 Intelligent-Tiering. Use S3 Lifecycle policies to move the files to S3 Glacier Flexible Retrieval after 1 year. Query and retrieve the files that are in Amazon S3 by using Amazon Athena. Query and retrieve the files that are in S3 Glacier by using S3 Glacier Select.

S3 Intelligent-Tiering is the ideal storage class for data with unknown, changing, or unpredictable access patterns, independent of object size or retention period. You can use S3 Intelligent-Tiering as the default storage class for virtually any workload, especially data lakes, data analytics, new applications, and user-generated content.

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50] A company has a production workload that runs on 1,000 Amazon EC2 Linux instances. The workload is powered by third-party software. The company needs to patch the third-party software on all EC2 instances as quickly as possible to remediate a critical security vulnerability.

What should a solutions architect do to meet these requirements?

D. Use AWS Systems Manager Run Command to run a custom command that applies the patch to all EC2 instances.

AWS Systems Manager Run Command allows the company to run commands or scripts on multiple EC2 instances. By using Run Command, the company can quickly and easily apply the patch to all 1,000 EC2 instances to remediate the security vulnerability.

Creating an AWS Lambda function to apply the patch to all EC2 instances would not be a suitable solution, as Lambda functions are not designed to run on EC2 instances. Configuring AWS Systems Manager Patch Manager to apply the patch to all EC2 instances would not be a suitable solution, as Patch Manager is not designed to apply third-party software patches. Scheduling an AWS Systems Manager maintenance window to apply the patch to all EC2 instances would not be a suitable solution, as maintenance windows are not designed to apply patches to third-party software.

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51.A company is developing an application that provides order shipping statistics for retrieval by a REST API. The company wants to extract the shipping statistics, organize the data into an easy-to-read HTML format, and send the report to several email addresses at the same time every morning.

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

D. Create an Amazon EventBridge (Amazon CloudWatch Events) scheduled event that invokes an AWS Lambda function to query the application's API for the data.

E. Store the application data in Amazon S3. Create an Amazon Simple Notification Service (Amazon SNS) topic as an S3 event destination to send the report by email.

52.A company wants to migrate its on-premises application to AWS. The application produces output files that vary in size from tens of gigabytes to hundreds of terabytes. The application data must be stored in a standard file system structure. The company wants a solution that scales automatically. is highly available, and requires minimum operational overhead.

Which solution will meet these requirements?

C. Migrate the application to Amazon EC2 instances in a Multi-AZ Auto Scaling group. Use Amazon Elastic File System (Amazon EFS) for storage.

53.A company needs to store its accounting records in Amazon S3. The records must be immediately accessible for 1 year and then must be archived for an additional 9 years. No one at the company, including administrative users and root users, can be able to delete the records during the entire 10-year period. The records must be stored with maximum resiliency.

Which solution will meet these requirements?

C. Use an S3 Lifecycle policy to transition the records from S3 Standard to S3 Glacier Deep Archive after 1 year. Use S3 Object Lock in compliance mode for a period of 10 years.

54.A company runs multiple Windows workloads on AWS. The company's employees use Windows file shares that are hosted on two Amazon EC2 instances. The file shares synchronize data between themselves and maintain duplicate copies. The company wants a highly available and durable storage solution that preserves how users currently access the files.

What should a solutions architect do to meet these requirements?

C. Extend the file share environment to Amazon FSx for Windows File Server with a Multi-AZ configuration. Migrate all the data to FSx for Windows File Server.

55.A solutions architect is developing a VPC architecture that includes multiple subnets. The architecture will host applications that use Amazon EC2 instances and Amazon RDS DB instances. The architecture consists of six subnets in two Availability Zones. Each Availability Zone includes a public subnet, a private subnet, and a dedicated subnet for databases. Only EC2 instances that run in the private subnets can have access to the RDS databases.

Which solution will meet these requirements?

C. Create a security group that allows inbound traffic from the security group that is assigned to instances in the private subnets. Attach the security group to the DB instances.

56.A company has registered its domain name with Amazon Route 53. The company uses Amazon API Gateway in the ca-central-1 Region as a public interface for its backend microservice APIs. Third-party services consume the APIs securely. The company wants to design its API Gateway URL with the company's domain name and corresponding certificate so that the third-party services can use HTTPS.

Which solution will meet these requirements?

D. Create a Regional API Gateway endpoint. Associate the API Gateway endpoint with the company's domain name. Import the public certificate associated with the company's domain name into AWS Certificate Manager (ACM) in the us-east-1 Region. Attach the certificate to the API Gateway APIs. Create Route 53 DNS records with the company's domain name. Point an A record to the company's domain name.

57.A company is running a popular social media website. The website gives users the ability to upload images to share with other users. The company wants to make sure that the images do not contain inappropriate content. The company needs a solution that minimizes development effort.

What should a solutions architect do to meet these requirements?

B. Use Amazon Rekognition to detect inappropriate content. Use human review for low-confidence predictions.

58.A company wants to run its critical applications in containers to meet requirements for scalability and availability. The company prefers to focus on maintenance of the critical applications. The company does not want to be responsible for provisioning and managing the underlying infrastructure that runs the containerized workload.

What should a solutions architect do to meet these requirements?

C. Use Amazon Elastic Container Service (Amazon ECS) on AWS Fargate.

59.A company hosts more than 300 global websites and applications. The company requires a platform to analyze more than 30 TB of clickstream data each day.

What should a solutions architect do to transmit and process the clickstream data?

D. Collect the data from Amazon Kinesis Data Streams. Use Amazon Kinesis Data Firehose to transmit the data to an Amazon S3 data lake. Load the data in Amazon Redshift for analysis.

60.A company has a website hosted on AWS. The website is behind an Application Load Balancer (ALB) that is configured to handle HTTP and HTTPS separately. The company wants to forward all requests to the website so that the requests will use HTTPS.

What should a solutions architect do to meet this requirement?

C. Create a listener rule on the ALB to redirect HTTP traffic to HTTPS.

61.A company is developing a two-tier web application on AWS. The company's developers have deployed the application on an Amazon EC2 instance that connects directly to a backend Amazon RDS database. The company must not hardcode database credentials in the application. The company must also implement a solution to automatically rotate the database credentials on a regular basis.

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

C. Store the database credentials as a secret in AWS Secrets Manager. Turn on automatic rotation for the secret. Attach the required permission to the EC2 role to grant access to the secret.

62.A company is deploying a new public web application to AWS. The application will run behind an Application Load Balancer (ALB). The application needs to be encrypted at the edge with an SSL/TLS certificate that is issued by an external certificate authority (CA). The certificate must be rotated each year before the certificate expires.

What should a solutions architect do to meet these requirements?

D. Use AWS Certificate Manager (ACM) to import an SSL/TLS certificate. Apply the certificate to the ALB. Use Amazon EventBridge (Amazon CloudWatch Events) to send a notification when the certificate is nearing expiration. Rotate the certificate manually.

63.A company runs its infrastructure on AWS and has a registered base of 700,000 users for its document management application. The company intends to create a product that converts large .pdf files to .jpg image files. The .pdf files average 5 MB in size. The company needs to store the original files and the converted files. A solutions architect must design a scalable solution to accommodate demand that will grow rapidly over time.

Which solution meets these requirements MOST cost-effectively?

A. Save the .pdf files to Amazon S3. Configure an S3 PUT event to invoke an AWS Lambda function to convert the files to .jpg format and store them back in Amazon S3.

64.A company has more than 5 TB of file data on Windows file servers that run on premises. Users and applications interact with the data each day.

The company is moving its Windows workloads to AWS. As the company continues this process, the company requires access to AWS and on-premises file storage with minimum latency. The company needs a solution that minimizes operational overhead and requires no significant changes to the existing file access patterns. The company uses an AWS Site-to-Site VPN connection for connectivity to AWS.

What should a solutions architect do to meet these requirements?

D. Deploy and configure Amazon FSx for Windows File Server on AWS. Deploy and configure an Amazon FSx File Gateway on premises. Move the on-premises file data to the FSx File Gateway. Configure the cloud workloads to use FSx for Windows File Server on AWS. Configure the on-premises workloads to use the FSx File Gateway.

65.A hospital recently deployed a RESTful API with Amazon API Gateway and AWS Lambda. The hospital uses API Gateway and Lambda to upload reports that are in PDF format and JPEG format. The hospital needs to modify the Lambda code to identify protected health information (PHI) in the reports.

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

C. Use Amazon Textract to extract the text from the reports. Use Amazon Comprehend Medical to identify the PHI from the extracted text.

66.A company has an application that generates a large number of files, each approximately 5 MB in size. The files are stored in Amazon S3. Company policy requires the files to be stored for 4 years before they can be deleted. Immediate accessibility is always required as the files contain critical business data that is not easy to reproduce. The files are frequently accessed in the first 30 days of the object creation but are rarely accessed after the first 30 days.

Which storage solution is MOST cost-effective?

C. Create an S3 bucket lifecycle policy to move files from S3 Standard to S3 Standard-Infrequent Access (S3 Standard-IA) 30 days from object creation. Delete the files 4 years after object creation.

67.A company hosts an application on multiple Amazon EC2 instances. The application processes messages from an Amazon SQS queue, writes to an Amazon RDS table, and deletes the message from the queue. Occasional duplicate records are found in the RDS table. The SQS queue does not contain any duplicate messages.

What should a solutions architect do to ensure messages are being processed once only?

D. Use the ChangeMessageVisibility API call to increase the visibility timeout.

68.A solutions architect is designing a new hybrid architecture to extend a company's on-premises infrastructure to AWS. The company requires a highly available connection with consistent low latency to an AWS Region. The company needs to minimize costs and is willing to accept slower traffic if the primary connection fails.

What should the solutions architect do to meet these requirements?

A. Provision an AWS Direct Connect connection to a Region. Provision a VPN connection as a backup if the primary Direct Connect connection fails.

69.A company is running a business-critical web application on Amazon EC2 instances behind an Application Load Balancer. The EC2 instances are in an Auto Scaling group. The application uses an Amazon Aurora PostgreSQL database that is deployed in a single Availability Zone. The company wants the application to be highly available with minimum downtime and minimum loss of data.

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

B. Configure the Auto Scaling group to use multiple Availability Zones. Configure the database as Multi-AZ. Configure an Amazon RDS Proxy instance for the database.

70.A company's HTTP application is behind a Network Load Balancer (NLB). The NLB's target group is configured to use an Amazon EC2 Auto Scaling group with multiple EC2 instances that run the web service.

The company notices that the NLB is not detecting HTTP errors for the application. These errors require a manual restart of the EC2 instances that run the web service. The company needs to improve the application's availability without writing custom scripts or code.

What should a solutions architect do to meet these requirements?

C. Replace the NLB with an Application Load Balancer. Enable HTTP health checks by supplying the URL of the company's application. Configure an Auto Scaling action to replace unhealthy instances.

71.A company runs a shopping application that uses Amazon DynamoDB to store customer information. In case of data corruption, a solutions architect needs to design a solution that meets a recovery point objective (RPO) of 15 minutes and a recovery time objective (RTO) of 1 hour.

What should the solutions architect recommend to meet these requirements?

B. Configure DynamoDB point-in-time recovery. For RPO recovery, restore to the desired point in time.

72.A company runs a photo processing application that needs to frequently upload and download pictures from Amazon S3 buckets that are located in the same AWS Region. A solutions architect has noticed an increased cost in data transfer fees and needs to implement a solution to reduce these costs.

How can the solutions architect meet this requirement?

D. Deploy an S3 VPC gateway endpoint into the VPC and attach an endpoint policy that allows access to the S3 buckets.

73.A company recently launched Linux-based application instances on Amazon EC2 in a private subnet and launched a Linux-based bastion host on an Amazon EC2 instance in a public subnet of a VPC. A solutions architect needs to connect from the on-premises network, through the company's internet connection, to the bastion host, and to the application servers. The solutions architect must make sure that the security groups of all the EC2 instances will allow that access.

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

C. Replace the current security group of the bastion host with one that only allows inbound access from the external IP range for the company.

D. Replace the current security group of the application instances with one that allows inbound SSH access from only the private IP address of the bastion host.

74.A solutions architect is designing a two-tier web application. The application consists of a public-facing web tier hosted on Amazon EC2 in public subnets. The database tier consists of Microsoft SQL Server running on Amazon EC2 in a private subnet. Security is a high priority for the company.

How should security groups be configured in this situation? (Choose two.)

A. Configure the security group for the web tier to allow inbound traffic on port 443 from 0.0.0.0/0.

C. Configure the security group for the database tier to allow inbound traffic on port 1433 from the security group for the web tier.

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75.A company wants to move a multi-tiered application from on premises to the AWS Cloud to improve the application's performance. The application consists of application tiers that communicate with each other by way of RESTful services. Transactions are dropped when one tier becomes overloaded. A solutions architect must design a solution that resolves these issues and modernizes the application.

Which solution meets these requirements and is the MOST operationally efficient?

A. Use Amazon API Gateway and direct transactions to the AWS Lambda functions as the application layer. Use Amazon Simple Queue Service (Amazon SQS) as the communication layer between application services.

76.A company receives 10 TB of instrumentation data each day from several machines located at a single factory. The data consists of JSON files stored on a storage area network (SAN) in an on-premises data center located within the factory. The company wants to send this data to Amazon S3 where it can be accessed by several additional systems that provide critical near-real-time analytics. A secure transfer is important because the data is considered sensitive.

Which solution offers the MOST reliable data transfer?

B. AWS DataSync over AWS Direct Connect

77.A company needs to configure a real-time data ingestion architecture for its application. The company needs an API, a process that transforms data as the data is streamed, and a storage solution for the data.

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

C. Configure an Amazon API Gateway API to send data to an Amazon Kinesis data stream. Create an Amazon Kinesis Data Firehose delivery stream that uses the Kinesis data stream as a data source. Use AWS Lambda functions to transform the data. Use the Kinesis Data Firehose delivery stream to send the data to Amazon S3.

78.A company needs to keep user transaction data in an Amazon DynamoDB table. The company must retain the data for 7 years.

What is the MOST operationally efficient solution that meets these requirements?

B. Use AWS Backup to create backup schedules and retention policies for the table.

79.A company is planning to use an Amazon DynamoDB table for data storage. The company is concerned about cost optimization. The table will not be used on most mornings. In the evenings, the read and write traffic will often be unpredictable. When traffic spikes occur, they will happen very quickly.

What should a solutions architect recommend?

A. Create a DynamoDB table in on-demand capacity mode.

80.A company recently signed a contract with an AWS Managed Service Provider (MSP) Partner for help with an application migration initiative. A solutions architect needs ta share an Amazon Machine Image (AMI) from an existing AWS account with the MSP Partner's AWS account. The AMI is backed by Amazon Elastic Block Store (Amazon EBS) and uses an AWS Key Management Service (AWS KMS) customer managed key to encrypt EBS volume snapshots.

What is the MOST secure way for the solutions architect to share the AMI with the MSP Partner's AWS account?

81.A solutions architect is designing the cloud architecture for a new application being deployed on AWS. The process should run in parallel while adding and removing application nodes as needed based on the number of jobs to be processed. The processor application is stateless. The solutions architect must ensure that the application is loosely coupled and the job items are durably stored.

Which design should the solutions architect use?

C. Create an Amazon SQS queue to hold the jobs that need to be processed. Create an Amazon Machine Image (AMI) that consists of the processor application. Create a launch template that uses the AMI. Create an Auto Scaling group using the launch template. Set the scaling policy for the Auto Scaling group to add and remove nodes based on the number of items in the SQS queue.

82.A company hosts its web applications in the AWS Cloud. The company configures Elastic Load Balancers to use certificates that are imported into AWS Certificate Manager (ACM). The company's security team must be notified 30 days before the expiration of each certificate.

What should a solutions architect recommend to meet this requirement?

B. Create an AWS Config rule that checks for certificates that will expire within 30 days. Configure Amazon EventBridge (Amazon CloudWatch Events) to invoke a custom alert by way of Amazon Simple Notification Service (Amazon SNS) when AWS Config reports a noncompliant resource.

D. Create an Amazon EventBridge (Amazon CloudWatch Events) rule to detect any certificates that will expire within 30 days. Configure the rule to invoke an AWS Lambda function. Configure the Lambda function to send a custom alert by way of Amazon Simple Notification Service (Amazon SNS).

83.A company's dynamic website is hosted using on-premises servers in the United States. The company is launching its product in Europe, and it wants to optimize site loading times for new European users. The site's backend must remain in the United States. The product is being launched in a few days, and an immediate solution is needed.

What should the solutions architect recommend?

C. Use Amazon CloudFront with a custom origin pointing to the on-premises servers.

84.A company wants to reduce the cost of its existing three-tier web architecture. The web, application, and database servers are running on Amazon EC2 instances for the development, test, and production environments. The EC2 instances average 30% CPU utilization during peak hours and 10% CPU utilization during non-peak hours.

The production EC2 instances run 24 hours a day. The development and test EC2 instances run for at least 8 hours each day. The company plans to implement automation to stop the development and test EC2 instances when they are not in use.

Which EC2 instance purchasing solution will meet the company's requirements MOST cost-effectively?

B. Use Reserved Instances for the production EC2 instances. Use On-Demand Instances for the development and test EC2 instances.

85.A company has a production web application in which users upload documents through a web interface or a mobile app. According to a new regulatory requirement. new documents cannot be modified or deleted after they are stored.

What should a solutions architect do to meet this requirement?

A. Store the uploaded documents in an Amazon S3 bucket with S3 Versioning and S3 Object Lock enabled.

86.A company has several web servers that need to frequently access a common Amazon RDS MySQL Multi-AZ DB instance. The company wants a secure method for the web servers to connect to the database while meeting a security requirement to rotate user credentials frequently.

Which solution meets these requirements?

A. Store the database user credentials in AWS Secrets Manager. Grant the necessary IAM permissions to allow the web servers to access AWS Secrets Manager.

87.A company hosts an application on AWS Lambda functions that are invoked by an Amazon API Gateway API. The Lambda functions save customer data to an Amazon Aurora MySQL database. Whenever the company upgrades the database, the Lambda functions fail to establish database connections until the upgrade is complete. The result is that customer data is not recorded for some of the event.

A solutions architect needs to design a solution that stores customer data that is created during database upgrades.

Which solution will meet these requirements?

D. Store the customer data in an Amazon Simple Queue Service (Amazon SQS) FIFO queue. Create a new Lambda function that polls the queue and stores the customer data in the database.

88.A survey company has gathered data for several years from areas in the United States. The company hosts the data in an Amazon S3 bucket that is 3 TB in size and growing. The company has started to share the data with a European marketing firm that has S3 buckets. The company wants to ensure that its data transfer costs remain as low as possible.

Which solution will meet these requirements?

A. Configure the Requester Pays feature on the company's S3 bucket.

B. Configure S3 Cross-Region Replication from the company's S3 bucket to one of the marketing firm's S3 buckets.

89.A company uses Amazon S3 to store its confidential audit documents. The S3 bucket uses bucket policies to restrict access to audit team IAM user credentials according to the principle of least privilege. Company managers are worried about accidental deletion of documents in the S3 bucket and want a more secure solution.

What should a solutions architect do to secure the audit documents?

A. Enable the versioning and MFA Delete features on the S3 bucket.

90.A company is using a SQL database to store movie data that is publicly accessible. The database runs on an Amazon RDS Single-AZ DB instance. A script runs queries at random intervals each day to record the number of new movies that have been added to the database. The script must report a final total during business hours.

The company's development team notices that the database performance is inadequate for development tasks when the script is running. A solutions architect must recommend a solution to resolve this issue.

Which solution will meet this requirement with the LEAST operational overhead?

B. Create a read replica of the database. Configure the script to query only the read replica.

91.A company has applications that run on Amazon EC2 instances in a VPC. One of the applications needs to call the Amazon S3 API to store and read objects. According to the company's security regulations, no traffic from the applications is allowed to travel across the internet.

Which solution will meet these requirements?

A. Configure an S3 gateway endpoint.

92.A company is storing sensitive user information in an Amazon S3 bucket. The company wants to provide secure access to this bucket from the application tier running on Amazon EC2 instances inside a VPC.

Which combination of steps should a solutions architect take to accomplish this? (Choose two.)

A. Configure a VPC gateway endpoint for Amazon S3 within the VPC.

C. Create a bucket policy that limits access to only the application tier running in the VPC.

93.A company runs an on-premises application that is powered by a MySQL database. The company is migrating the application to AWS to increase the application's elasticity and availability.

The current architecture shows heavy read activity on the database during times of normal operation. Every 4 hours, the company's development team pulls a full export of the production database to populate a database in the staging environment. During this period, users experience unacceptable application latency. The development team is unable to use the staging environment until the procedure completes.

A solutions architect must recommend replacement architecture that alleviates the application latency issue. The replacement architecture also must give the development team the ability to continue using the staging environment without delay.

Which solution meets these requirements?

B. Use Amazon Aurora MySQL with Multi-AZ Aurora Replicas for production. Use database cloning to create the staging database on-demand.

94.A company is designing an application where users upload small files into Amazon S3. After a user uploads a file, the file requires one-time simple processing to transform the data and save the data in JSON format for later analysis.

Each file must be processed as quickly as possible after it is uploaded. Demand will vary. On some days, users will upload a high number of files. On other days, users will upload a few files or no files.

Which solution meets these requirements with the LEAST operational overhead?

C. Configure Amazon S3 to send an event notification to an Amazon Simple Queue Service (Amazon SQS) queue. Use an AWS Lambda function to read from the queue and process the data. Store the resulting JSON file in Amazon DynamoDB.

95.An application allows users at a company's headquarters to access product data. The product data is stored in an Amazon RDS MySQL DB instance. The operations team has isolated an application performance slowdown and wants to separate read traffic from write traffic. A solutions architect needs to optimize the application's performance quickly.

What should the solutions architect recommend?

D. Create read replicas for the database. Configure the read replicas with the same compute and storage resources as the source database.

96.C. Users can terminate an EC2 instance in the us-east-1 Region when the user's source IP is 10.100.100.254.

97.A company has a large Microsoft SharePoint deployment running on-premises that requires Microsoft Windows shared file storage. The company wants to migrate this workload to the AWS Cloud and is considering various storage options. The storage solution must be highly available and integrated with Active Directory for access control.

Which solution will satisfy these requirements?

D. Create an Amazon FSx for Windows File Server file system on AWS and set the Active Directory domain for authentication.

IMP>>>>>>98.An image-processing company has a web application that users use to upload images. The application uploads the images into an Amazon S3 bucket. The company has set up S3 event notifications to publish the object creation events to an Amazon Simple Queue Service (Amazon SQS) standard queue. The SQS queue serves as the event source for an AWS Lambda function that processes the images and sends the results to users through email.

Users report that they are receiving multiple email messages for every uploaded image. A solutions architect determines that SQS messages are invoking the Lambda function more than once, resulting in multiple email messages.

What should the solutions architect do to resolve this issue with the LEAST operational overhead?

A. Set up long polling in the SQS queue by increasing the ReceiveMessage wait time to 30 seconds.

99.A company is implementing a shared storage solution for a gaming application that is hosted in an on-premises data center. The company needs the ability to use Lustre clients to access data. The solution must be fully managed.

Which solution meets these requirements?

D. Create an Amazon FSx for Lustre file system. Attach the file system to the origin server. Connect the application server to the file system.

100.A company's containerized application runs on an Amazon EC2 instance. The application needs to download security certificates before it can communicate with other business applications. The company wants a highly secure solution to encrypt and decrypt the certificates in near real time. The solution also needs to store data in highly available storage after the data is encrypted.

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

D. Create an AWS Key Management Service (AWS KMS) customer managed key. Allow the EC2 role to use the KMS key for encryption operations. Store the encrypted data on Amazon Elastic Block Store (Amazon EBS) volumes.

101.A solutions architect is designing a VPC with public and private subnets. The VPC and subnets use IPv4 CIDR blocks. There is one public subnet and one private subnet in each of three Availability Zones (AZs) for high availability. An internet gateway is used to provide internet access for the public subnets. The private subnets require access to the internet to allow Amazon EC2 instances to download software updates.

What should the solutions architect do to enable Internet access for the private subnets?

A. Create three NAT gateways, one for each public subnet in each AZ. Create a private route table for each AZ that forwards non-VPC traffic to the NAT gateway in its AZ.

102.A company wants to migrate an on-premises data center to AWS. The data center hosts an SFTP server that stores its data on an NFS-based file system. The server holds 200 GB of data that needs to be transferred. The server must be hosted on an Amazon EC2 instance that uses an Amazon Elastic File System (Amazon EFS) file system.

Which combination of steps should a solutions architect take to automate this task? (Choose two.)

A. Launch the EC2 instance into the same Availability Zone as the EFS file system.

B. Install an AWS DataSync agent in the on-premises data center.

103.A company has an AWS Glue extract, transform, and load (ETL) job that runs every day at the same time. The job processes XML data that is in an Amazon S3 bucket. New data is added to the S3 bucket every day. A solutions architect notices that AWS Glue is processing all the data during each run.

What should the solutions architect do to prevent AWS Glue from reprocessing old data?

A. Edit the job to use job bookmarks.

104.A solutions architect must design a highly available infrastructure for a website. The website is powered by Windows web servers that run on Amazon EC2 instances. The solutions architect must implement a solution that can mitigate a large-scale DDoS attack that originates from thousands of IP addresses. Downtime is not acceptable for the website.

Which actions should the solutions architect take to protect the website from such an attack? (Choose two.)

A. Use AWS Shield Advanced to stop the DDoS attack.

C. Configure the website to use Amazon CloudFront for both static and dynamic content.

105.A company is preparing to deploy a new serverless workload. A solutions architect must use the principle of least privilege to configure permissions that will be used to run an AWS Lambda function. An Amazon EventBridge (Amazon CloudWatch Events) rule will invoke the function.

Which solution meets these requirements?

D. Add a resource-based policy to the function with lambda:InvokeFunction as the action and Service: events.amazonaws.com as the principal.

106.A company is preparing to store confidential data in Amazon S3. For compliance reasons, the data must be encrypted at rest. Encryption key usage must be logged for auditing purposes. Keys must be rotated every year.

Which solution meets these requirements and is the MOST operationally efficient?

D. Server-side encryption with AWS KMS keys (SSE-KMS) with automatic rotation

107.A bicycle sharing company is developing a multi-tier architecture to track the location of its bicycles during peak operating hours. The company wants to use these data points in its existing analytics platform. A solutions architect must determine the most viable multi-tier option to support this architecture. The data points must be accessible from the REST API.

Which action meets these requirements for storing and retrieving location data?

B. Use Amazon API Gateway with AWS Lambda.

108.A company has an automobile sales website that stores its listings in a database on Amazon RDS. When an automobile is sold, the listing needs to be removed from the website and the data must be sent to multiple target systems.

Which design should a solutions architect recommend?

C. Subscribe to an RDS event notification and send an Amazon Simple Queue Service (Amazon SQS) queue fanned out to multiple Amazon Simple Notification Service (Amazon SNS) topics. Use AWS Lambda functions to update the targets.

109.A company needs to store data in Amazon S3 and must prevent the data from being changed. The company wants new objects that are uploaded to Amazon S3 to remain unchangeable for a nonspecific amount of time until the company decides to modify the objects. Only specific users in the company's AWS account can have the ability 10 delete the objects.

What should a solutions architect do to meet these requirements?

D. Create an S3 bucket with S3 Object Lock enabled. Enable versioning. Add a legal hold to the objects. Add the s3:PutObjectLegalHold permission to the IAM policies of users who need to delete the objects.

110.A social media company allows users to upload images to its website. The website runs on Amazon EC2 instances. During upload requests, the website resizes the images to a standard size and stores the resized images in Amazon S3. Users are experiencing slow upload requests to the website.

The company needs to reduce coupling within the application and improve website performance. A solutions architect must design the most operationally efficient process for image uploads.

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

B. Configure the web server to upload the original images to Amazon S3.

D. Configure S3 Event Notifications to invoke an AWS Lambda function when an image is uploaded. Use the function to resize the image.

111.A company recently migrated a message processing system to AWS. The system receives messages into an ActiveMQ queue running on an Amazon EC2 instance. Messages are processed by a consumer application running on Amazon EC2. The consumer application processes the messages and writes results to a MySQL database running on Amazon EC2. The company wants this application to be highly available with low operational complexity.

Which architecture offers the HIGHEST availability?

D. Use Amazon MQ with active/standby brokers configured across two Availability Zones. Add an Auto Scaling group for the consumer EC2 instances across two Availability Zones. Use Amazon RDS for MySQL with Multi-AZ enabled.

112.A company hosts a containerized web application on a fleet of on-premises servers that process incoming requests. The number of requests is growing quickly. The on-premises servers cannot handle the increased number of requests. The company wants to move the application to AWS with minimum code changes and minimum development effort.

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

A. Use AWS Fargate on Amazon Elastic Container Service (Amazon ECS) to run the containerized web application with Service Auto Scaling. Use an Application Load Balancer to distribute the incoming requests.

113.A company uses 50 TB of data for reporting. The company wants to move this data from on premises to AWS. A custom application in the company’s data center runs a weekly data transformation job. The company plans to pause the application until the data transfer is complete and needs to begin the transfer process as soon as possible.

The data center does not have any available network bandwidth for additional workloads. A solutions architect must transfer the data and must configure the transformation job to continue to run in the AWS Cloud.

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

C. Order an AWS Snowball Edge Storage Optimized device. Copy the data to the device. Create a custom transformation job by using AWS Glue.

114.A company has created an image analysis application in which users can upload photos and add photo frames to their images. The users upload images and metadata to indicate which photo frames they want to add to their images. The application uses a single Amazon EC2 instance and Amazon DynamoDB to store the metadata.

The application is becoming more popular, and the number of users is increasing. The company expects the number of concurrent users to vary significantly depending on the time of day and day of week. The company must ensure that the application can scale to meet the needs of the growing user base.

Which solution meats these requirements?

A. Use AWS Lambda to process the photos. Store the photos and metadata in DynamoDB.

115.A medical records company is hosting an application on Amazon EC2 instances. The application processes customer data files that are stored on Amazon S3. The EC2 instances are hosted in public subnets. The EC2 instances access Amazon S3 over the internet, but they do not require any other network access.

A new requirement mandates that the network traffic for file transfers take a private route and not be sent over the internet.

Which change to the network architecture should a solutions architect recommend to meet this requirement?

C. Move the EC2 instances to private subnets. Create a VPC endpoint for Amazon S3, and link the endpoint to the route table for the private subnets.

116.A company uses a popular content management system (CMS) for its corporate website. However, the required patching and maintenance are burdensome. The company is redesigning its website and wants anew solution. The website will be updated four times a year and does not need to have any dynamic content available. The solution must provide high scalability and enhanced security.

Which combination of changes will meet these requirements with the LEAST operational overhead? (Choose two.)

A. Configure Amazon CloudFront in front of the website to use HTTPS functionality.

D. Create the new website and an Amazon S3 bucket. Deploy the website on the S3 bucket with static website hosting enabled.

117.A company stores its application logs in an Amazon CloudWatch Logs log group. A new policy requires the company to store all application logs in Amazon OpenSearch Service (Amazon Elasticsearch Service) in near-real time.

Which solution will meet this requirement with the LEAST operational overhead?

C. Create an Amazon Kinesis Data Firehose delivery stream. Configure the log group as the delivery streams sources. Configure Amazon OpenSearch Service (Amazon Elasticsearch Service) as the delivery stream's destination.

118.A company is building a web-based application running on Amazon EC2 instances in multiple Availability Zones. The web application will provide access to a repository of text documents totaling about 900 TB in size. The company anticipates that the web application will experience periods of high demand. A solutions architect must ensure that the storage component for the text documents can scale to meet the demand of the application at all times. The company is concerned about the overall cost of the solution.

Which storage solution meets these requirements MOST cost-effectively?

D. Amazon S3

119.A global company is using Amazon API Gateway to design REST APIs for its loyalty club users in the us-east-1 Region and the ap-southeast-2 Region. A solutions architect must design a solution to protect these API Gateway managed REST APIs across multiple accounts from SQL injection and cross-site scripting attacks.

Which solution will meet these requirements with the LEAST amount of administrative effort?

A. Set up AWS WAF in both Regions. Associate Regional web ACLs with an API stage.

120.A company has implemented a self-managed DNS solution on three Amazon EC2 instances behind a Network Load Balancer (NLB) in the us-west-2 Region. Most of the company's users are located in the United States and Europe. The company wants to improve the performance and availability of the solution. The company launches and configures three EC2 instances in the eu-west-1 Region and adds the EC2 instances as targets for a new NLB.

Which solution can the company use to route traffic to all the EC2 instances?

A. Create an Amazon Route 53 geolocation routing policy to route requests to one of the two NLBs. Create an Amazon CloudFront distribution. Use the Route 53 record as the distribution’s origin.

121.A company is running an online transaction processing (OLTP) workload on AWS. This workload uses an unencrypted Amazon RDS DB instance in a Multi-AZ deployment. Daily database snapshots are taken from this instance.

What should a solutions architect do to ensure the database and snapshots are always encrypted moving forward?

A. Encrypt a copy of the latest DB snapshot. Replace existing DB instance by restoring the encrypted snapshot.

122.A company wants to build a scalable key management infrastructure to support developers who need to encrypt data in their applications.

What should a solutions architect do to reduce the operational burden?

B. Use AWS Key Management Service (AWS KMS) to protect the encryption keys.

123.A company has a dynamic web application hosted on two Amazon EC2 instances. The company has its own SSL certificate, which is on each instance to perform SSL termination.

There has been an increase in traffic recently, and the operations team determined that SSL encryption and decryption is causing the compute capacity of the web servers to reach their maximum limit.

What should a solutions architect do to increase the application's performance?

D. Import the SSL certificate into AWS Certificate Manager (ACM). Create an Application Load Balancer with an HTTPS listener that uses the SSL certificate from ACM.

IMP>>>>>>124.A company has a highly dynamic batch processing job that uses many Amazon EC2 instances to complete it. The job is stateless in nature, can be started and stopped at any given time with no negative impact, and typically takes upwards of 60 minutes total to complete. The company has asked a solutions architect to design a scalable and cost-effective solution that meets the requirements of the job.

What should the solutions architect recommend?

A. Implement EC2 Spot Instances.

IMP>>>>>>>125.A company runs its two-tier ecommerce website on AWS. The web tier consists of a load balancer that sends traffic to Amazon EC2 instances. The database tier uses an Amazon RDS DB instance. The EC2 instances and the RDS DB instance should not be exposed to the public internet. The EC2 instances require internet access to complete payment processing of orders through a third-party web service. The application must be highly available.

Which combination of configuration options will meet these requirements? (Choose two.)

A. Use an Auto Scaling group to launch the EC2 instances in private subnets. Deploy an RDS Multi-AZ DB instance in private subnets.

B. Configure a VPC with two private subnets and two NAT gateways across two Availability Zones. Deploy an Application Load Balancer in the private subnets.

C. Use an Auto Scaling group to launch the EC2 instances in public subnets across two Availability Zones. Deploy an RDS Multi-AZ DB instance in private subnets.

D. Configure a VPC with one public subnet, one private subnet, and two NAT gateways across two Availability Zones. Deploy an Application Load Balancer in the public subnet.

E. Configure a VPC with two public subnets, two private subnets, and two NAT gateways across two Availability Zones. Deploy an Application Load Balancer in the public subnets.

126.A solutions architect needs to implement a solution to reduce a company's storage costs. All the company's data is in the Amazon S3 Standard storage class. The company must keep all data for at least 25 years. Data from the most recent 2 years must be highly available and immediately retrievable.

Which solution will meet these requirements?

B. Set up an S3 Lifecycle policy to transition objects to S3 Glacier Deep Archive after 2 years.

127.A media company is evaluating the possibility of moving its systems to the AWS Cloud. The company needs at least 10 TB of storage with the maximum possible I/O performance for video processing, 300 TB of very durable storage for storing media content, and 900 TB of storage to meet requirements for archival media that is not in use anymore.

Which set of services should a solutions architect recommend to meet these requirements?

A. Amazon EBS for maximum performance, Amazon S3 for durable data storage, and Amazon S3 Glacier for archival storage

D. Amazon EC2 instance store for maximum performance, Amazon S3 for durable data storage, and Amazon S3 Glacier for archival storage

128.A company wants to run applications in containers in the AWS Cloud. These applications are stateless and can tolerate disruptions within the underlying infrastructure. The company needs a solution that minimizes cost and operational overhead.

What should a solutions architect do to meet these requirements?

A. Use Spot Instances in an Amazon EC2 Auto Scaling group to run the application containers.

B. Use Spot Instances in an Amazon Elastic Kubernetes Service (Amazon EKS) managed node group.

129.A company is running a multi-tier web application on premises. The web application is containerized and runs on a number of Linux hosts connected to a PostgreSQL database that contains user records. The operational overhead of maintaining the infrastructure and capacity planning is limiting the company's growth. A solutions architect must improve the application's infrastructure.

Which combination of actions should the solutions architect take to accomplish this? (Choose two.)

A. Migrate the PostgreSQL database to Amazon Aurora.

E. Migrate the web application to be hosted on AWS Fargate with Amazon Elastic Container Service (Amazon ECS).

130.An application runs on Amazon EC2 instances across multiple Availability Zonas. The instances run in an Amazon EC2 Auto Scaling group behind an Application Load Balancer. The application performs best when the CPU utilization of the EC2 instances is at or near 40%.

What should a solutions architect do to maintain the desired performance across all instances in the group?

B. Use a target tracking policy to dynamically scale the Auto Scaling group.

131.A company is developing a file-sharing application that will use an Amazon S3 bucket for storage. The company wants to serve all the files through an Amazon CloudFront distribution. The company does not want the files to be accessible through direct navigation to the S3 URL.

What should a solutions architect do to meet these requirements?

D. Create an origin access identity (OAI). Assign the OAI to the CloudFront distribution. Configure the S3 bucket permissions so that only the OAI has read permission.

132.A company’s website provides users with downloadable historical performance reports. The website needs a solution that will scale to meet the company’s website demands globally. The solution should be cost-effective, limit the provisioning of infrastructure resources, and provide the fastest possible response time.

Which combination should a solutions architect recommend to meet these requirements?

A. Amazon CloudFront and Amazon S3

133.A company runs an Oracle database on premises. As part of the company’s migration to AWS, the company wants to upgrade the database to the most recent available version. The company also wants to set up disaster recovery (DR) for the database. The company needs to minimize the operational overhead for normal operations and DR setup. The company also needs to maintain access to the database's underlying operating system.

Which solution will meet these requirements?

A. Migrate the Oracle database to an Amazon EC2 instance. Set up database replication to a different AWS Region.

B. Migrate the Oracle database to Amazon RDS for Oracle. Activate Cross-Region automated backups to replicate the snapshots to another AWS Region.

C. Migrate the Oracle database to Amazon RDS Custom for Oracle. Create a read replica for the database in another AWS Region.

D. Migrate the Oracle database to Amazon RDS for Oracle. Create a standby database in another Availability Zone.

134.A company wants to move its application to a serverless solution. The serverless solution needs to analyze existing and new data by using SL. The company stores the data in an Amazon S3 bucket. The data requires encryption and must be replicated to a different AWS Region.

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

A. Create a new S3 bucket. Load the data into the new S3 bucket. Use S3 Cross-Region Replication (CRR) to replicate encrypted objects to an S3 bucket in another Region. Use server-side encryption with AWS KMS multi-Region kays (SSE-KMS). Use Amazon Athena to query the data.

135.A company runs workloads on AWS. The company needs to connect to a service from an external provider. The service is hosted in the provider's VPC. According to the company’s security team, the connectivity must be private and must be restricted to the target service. The connection must be initiated only from the company’s VPC.

Which solution will mast these requirements?

D. Ask the provider to create a VPC endpoint for the target service. Use AWS PrivateLink to connect to the target service.

IMP>>>>>>>>136.A company is migrating its on-premises PostgreSQL database to Amazon Aurora PostgreSQL. The on-premises database must remain online and accessible during the migration. The Aurora database must remain synchronized with the on-premises database.

Which combination of actions must a solutions architect take to meet these requirements? (Choose two.)

C. Create an AWS Database Migration Service (AWS DMS) replication server.

D. Convert the database schema by using the AWS Schema Conversion Tool (AWS SCT).

137.A company uses AWS Organizations to create dedicated AWS accounts for each business unit to manage each business unit's account independently upon request. The root email recipient missed a notification that was sent to the root user email address of one account. The company wants to ensure that all future notifications are not missed. Future notifications must be limited to account administrators.

Which solution will meet these requirements?

D. Configure all existing AWS accounts and all newly created accounts to use the same root user email address. Configure AWS account alternate contacts in the AWS Organizations console or programmatically.

138.A company runs its ecommerce application on AWS. Every new order is published as a massage in a RabbitMQ queue that runs on an Amazon EC2 instance in a single Availability Zone. These messages are processed by a different application that runs on a separate EC2 instance. This application stores the details in a PostgreSQL database on another EC2 instance. All the EC2 instances are in the same Availability Zone.

The company needs to redesign its architecture to provide the highest availability with the least operational overhead.

What should a solutions architect do to meet these requirements?

B. Migrate the queue to a redundant pair (active/standby) of RabbitMQ instances on Amazon MQ. Create a Multi-AZ Auto Scaling group for EC2 instances that host the application. Migrate the database to run on a Multi-AZ deployment of Amazon RDS for PostgreSQL.

139.A reporting team receives files each day in an Amazon S3 bucket. The reporting team manually reviews and copies the files from this initial S3 bucket to an analysis S3 bucket each day at the same time to use with Amazon QuickSight. Additional teams are starting to send more files in larger sizes to the initial S3 bucket.

The reporting team wants to move the files automatically analysis S3 bucket as the files enter the initial S3 bucket. The reporting team also wants to use AWS Lambda functions to run pattern-matching code on the copied data. In addition, the reporting team wants to send the data files to a pipeline in Amazon SageMaker Pipelines.

What should a solutions architect do to meet these requirements with the LEAST operational overhead?

A. Create a Lambda function to copy the files to the analysis S3 bucket. Create an S3 event notification for the analysis S3 bucket. Configure Lambda and SageMaker Pipelines as destinations of the event notification. Configure s3:ObjectCreated:Put as the event type.

IMP>>>>>>>>>140.A solutions architect needs to help a company optimize the cost of running an application on AWS. The application will use Amazon EC2 instances, AWS Fargate, and AWS Lambda for compute within the architecture.

The EC2 instances will run the data ingestion layer of the application. EC2 usage will be sporadic and unpredictable. Workloads that run on EC2 instances can be interrupted at any time. The application front end will run on Fargate, and Lambda will serve the API layer. The front-end utilization and API layer utilization will be predictable over the course of the next year.

Which combination of purchasing options will provide the MOST cost-effective solution for hosting this application? (Choose two.)

A. Use Spot Instances for the data ingestion layer

C. Purchase a 1-year Compute Savings Plan for the front end and API layer.

141.A company runs a web-based portal that provides users with global breaking news, local alerts, and weather updates. The portal delivers each user a personalized view by using mixture of static and dynamic content. Content is served over HTTPS through an API server running on an Amazon EC2 instance behind an Application Load Balancer (ALB). The company wants the portal to provide this content to its users across the world as quickly as possible.

How should a solutions architect design the application to ensure the LEAST amount of latency for all users?

B. Deploy the application stack in two AWS Regions. Use an Amazon Route 53 latency routing policy to serve all content from the ALB in the closest Region.

142.A gaming company is designing a highly available architecture. The application runs on a modified Linux kernel and supports only UDP-based traffic. The company needs the front-end tier to provide the best possible user experience. That tier must have low latency, route traffic to the nearest edge location, and provide static IP addresses for entry into the application endpoints.

What should a solutions architect do to meet these requirements?

C. Configure AWS Global Accelerator to forward requests to a Network Load Balancer. Use Amazon EC2 instances for the application in an EC2 Auto Scaling group.

143.A company wants to migrate its existing on-premises monolithic application to AWS. The company wants to keep as much of the front-end code and the backend code as possible. However, the company wants to break the application into smaller applications. A different team will manage each application. The company needs a highly scalable solution that minimizes operational overhead.

Which solution will meet these requirements?

D. Host the application on Amazon Elastic Container Service (Amazon ECS). Set up an Application Load Balancer with Amazon ECS as the target.

144.A company recently started using Amazon Aurora as the data store for its global ecommerce application. When large reports are run, developers report that the ecommerce application is performing poorly. After reviewing metrics in Amazon CloudWatch, a solutions architect finds that the ReadIOPS and CPUUtilizalion metrics are spiking when monthly reports run.

What is the MOST cost-effective solution?

B. Migrate the monthly reporting to an Aurora Replica.

145.A company hosts a website analytics application on a single Amazon EC2 On-Demand Instance. The analytics software is written in PHP and uses a MySQL database. The analytics software, the web server that provides PHP, and the database server are all hosted on the EC2 instance. The application is showing signs of performance degradation during busy times and is presenting 5xx errors. The company needs to make the application scale seamlessly.

Which solution will meet these requirements MOST cost-effectively?

D. Migrate the database to an Amazon Aurora MySQL DB instance. Create an AMI of the web application. Apply the AMI to a launch template. Create an Auto Scaling group with the launch template Configure the launch template to use a Spot Fleet. Attach an Application Load Balancer to the Auto Scaling group.

146.A company runs a stateless web application in production on a group of Amazon EC2 On-Demand Instances behind an Application Load Balancer. The application experiences heavy usage during an 8-hour period each business day. Application usage is moderate and steady overnight. Application usage is low during weekends.

The company wants to minimize its EC2 costs without affecting the availability of the application.

Which solution will meet these requirements?

B. Use Reserved Instances for the baseline level of usage. Use Spot instances for any additional capacity that the application needs.

147.A company needs to retain application log files for a critical application for 10 years. The application team regularly accesses logs from the past month for troubleshooting, but logs older than 1 month are rarely accessed. The application generates more than 10 TB of logs per month.

Which storage option meets these requirements MOST cost-effectively?

B. Store the logs in Amazon S3. Use S3 Lifecycle policies to move logs more than 1 month old to S3 Glacier Deep Archive.

IMP>>>>>>148. A company has a data ingestion workflow that includes the following components:

An Amazon Simple Notification Service (Amazon SNS) topic that receives notifications about new data deliveries

An AWS Lambda function that processes and stores the data

The ingestion workflow occasionally fails because of network connectivity issues. When failure occurs, the corresponding data is not ingested unless the company manually reruns the job.

What should a solutions architect do to ensure that all notifications are eventually processed?

D. Configure an Amazon Simple Queue Service (Amazon SQS) queue as the on-failure destination. Modify the Lambda function to process messages in the queue.

149.A company has a service that produces event data. The company wants to use AWS to process the event data as it is received. The data is written in a specific order that must be maintained throughout processing. The company wants to implement a solution that minimizes operational overhead.

How should a solutions architect accomplish this?

A. Create an Amazon Simple Queue Service (Amazon SQS) FIFO queue to hold messages. Set up an AWS Lambda function to process messages from the queue.

150.A company is migrating an application from on-premises servers to Amazon EC2 instances. As part of the migration design requirements, a solutions architect must implement infrastructure metric alarms. The company does not need to take action if CPU utilization increases to more than 50% for a short burst of time. However, if the CPU utilization increases to more than 50% and read IOPS on the disk are high at the same time, the company needs to act as soon as possible. The solutions architect also must reduce false alarms.

What should the solutions architect do to meet these requirements?

A. Create Amazon CloudWatch composite alarms where possible.

IMP>>>>>151.A company wants to migrate its on-premises data center to AWS. According to the company's compliance requirements, the company can use only the ap-northeast-3 Region. Company administrators are not permitted to connect VPCs to the internet.

Which solutions will meet these requirements? (Choose two.)

A. Use AWS Control Tower to implement data residency guardrails to deny internet access and deny access to all AWS Regions except ap-northeast-3.

B. Use rules in AWS WAF to prevent internet access. Deny access to all AWS Regions except ap-northeast-3 in the AWS account settings.

C. Use AWS Organizations to configure service control policies (SCPS) that prevent VPCs from gaining internet access. Deny access to all AWS Regions except ap-northeast-3.

D. Create an outbound rule for the network ACL in each VPC to deny all traffic from 0.0.0.0/0. Create an IAM policy for each user to prevent the use of any AWS Region other than ap-northeast-3.

E. Use AWS Config to activate managed rules to detect and alert for internet gateways and to detect and alert for new resources deployed outside of ap-northeast-3.

152.A company uses a three-tier web application to provide training to new employees. The application is accessed for only 12 hours every day. The company is using an Amazon RDS for MySQL DB instance to store information and wants to minimize costs.

What should a solutions architect do to meet these requirements?

D. Create AWS Lambda functions to start and stop the DB instance. Create Amazon EventBridge (Amazon CloudWatch Events) scheduled rules to invoke the Lambda functions. Configure the Lambda functions as event targets for the rules.

153.A company sells ringtones created from clips of popular songs. The files containing the ringtones are stored in Amazon S3 Standard and are at least 128 KB in size. The company has millions of files, but downloads are infrequent for ringtones older than 90 days. The company needs to save money on storage while keeping the most accessed files readily available for its users.

Which action should the company take to meet these requirements MOST cost-effectively?

D. Implement an S3 Lifecycle policy that moves the objects from S3 Standard to S3 Standard-Infrequent Access (S3 Standard-1A) after 90 days.

154.A company needs to save the results from a medical trial to an Amazon S3 repository. The repository must allow a few scientists to add new files and must restrict all other users to read-only access. No users can have the ability to modify or delete any files in the repository. The company must keep every file in the repository for a minimum of 1 year after its creation date.

Which solution will meet these requirements?

B. Use S3 Object Lock in compliance mode with a retention period of 365 days.

155.A large media company hosts a web application on AWS. The company wants to start caching confidential media files so that users around the world will have reliable access to the files. The content is stored in Amazon S3 buckets. The company must deliver the content quickly, regardless of where the requests originate geographically.

Which solution will meet these requirements?

C. Deploy Amazon CloudFront to connect the S3 buckets to CloudFront edge servers.

156.A company produces batch data that comes from different databases. The company also produces live stream data from network sensors and application APIs. The company needs to consolidate all the data into one place for business analytics. The company needs to process the incoming data and then stage the data in different Amazon S3 buckets. Teams will later run one-time queries and import the data into a business intelligence tool to show key performance indicators (KPIs).

Which combination of steps will meet these requirements with the LEAST operational overhead? (Choose two.)

A. Use Amazon Athena for one-time queries. Use Amazon QuickSight to create dashboards for KPIs.

C. Create custom AWS Lambda functions to move the individual records from the databases to an Amazon Redshift cluster.

IMP>>>>>157.A company stores data in an Amazon Aurora PostgreSQL DB cluster. The company must store all the data for 5 years and must delete all the data after 5 years. The company also must indefinitely keep audit logs of actions that are performed within the database. Currently, the company has automated backups configured for Aurora.

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

A. Take a manual snapshot of the DB cluster.

B. Create a lifecycle policy for the automated backups.

C. Configure automated backup retention for 5 years.

D. Configure an Amazon CloudWatch Logs export for the DB cluster.

E. Use AWS Backup to take the backups and to keep the backups for 5 years.

IMP>>>>>158.A solutions architect is optimizing a website for an upcoming musical event. Videos of the performances will be streamed in real time and then will be available on demand. The event is expected to attract a global online audience.

Which service will improve the performance of both the real-time and on-demand streaming?

A. Amazon CloudFront

B. AWS Global Accelerator

IMP>>>>>>>>159.A company is running a publicly accessible serverless application that uses Amazon API Gateway and AWS Lambda. The application’s traffic recently spiked due to fraudulent requests from botnets.

Which steps should a solutions architect take to block requests from unauthorized users? (Choose two.)

A. Create a usage plan with an API key that is shared with genuine users only.

B. Integrate logic within the Lambda function to ignore the requests from fraudulent IP addresses.

C. Implement an AWS WAF rule to target malicious requests and trigger actions to filter them out.

D. Convert the existing public API to a private API. Update the DNS records to redirect users to the new API endpoint.

E. Create an IAM role for each user attempting to access the API. A user will assume the role when making the API call.

IMP>>>>>160.An ecommerce company hosts its analytics application in the AWS Cloud. The application generates about 300 MB of data each month. The data is stored in JSON format. The company is evaluating a disaster recovery solution to back up the data. The data must be accessible in milliseconds if it is needed, and the data must be kept for 30 days.

Which solution meets these requirements MOST cost-effectively?

A. Amazon OpenSearch Service (Amazon Elasticsearch Service)

B. Amazon S3 Glacier

C. Amazon S3 Standard

D. Amazon RDS for PostgreSQL

161.A company has a small Python application that processes JSON documents and outputs the results to an on-premises SQL database. The application runs thousands of times each day. The company wants to move the application to the AWS Cloud. The company needs a highly available solution that maximizes scalability and minimizes operational overhead.

Which solution will meet these requirements?

B. Place the JSON documents in an Amazon S3 bucket. Create an AWS Lambda function that runs the Python code to process the documents as they arrive in the S3 bucket. Store the results in an Amazon Aurora DB cluster.

162.A company wants to use high performance computing (HPC) infrastructure on AWS for financial risk modeling. The company’s HPC workloads run on Linux. Each HPC workflow runs on hundreds of Amazon EC2 Spot Instances, is short-lived, and generates thousands of output files that are ultimately stored in persistent storage for analytics and long-term future use.

The company seeks a cloud storage solution that permits the copying of on-premises data to long-term persistent storage to make data available for processing by all EC2 instances. The solution should also be a high performance file system that is integrated with persistent storage to read and write datasets and output files.

Which combination of AWS services meets these requirements?

A. Amazon FSx for Lustre integrated with Amazon S3

163.A company is building a containerized application on premises and decides to move the application to AWS. The application will have thousands of users soon after it is deployed. The company is unsure how to manage the deployment of containers at scale. The company needs to deploy the containerized application in a highly available architecture that minimizes operational overhead.

Which solution will meet these requirements?

A. Store container images in an Amazon Elastic Container Registry (Amazon ECR) repository. Use an Amazon Elastic Container Service (Amazon ECS) cluster with the AWS Fargate launch type to run the containers. Use target tracking to scale automatically based on demand.

164.A company has two applications: a sender application that sends messages with payloads to be processed and a processing application intended to receive the messages with payloads. The company wants to implement an AWS service to handle messages between the two applications. The sender application can send about 1,000 messages each hour. The messages may take up to 2 days to be processed: If the messages fail to process, they must be retained so that they do not impact the processing of any remaining messages.

C. Integrate the sender and processor applications with an Amazon Simple Queue Service (Amazon SQS) queue. Configure a dead-letter queue to collect the messages that failed to process.

165.A solutions architect must design a solution that uses Amazon CloudFront with an Amazon S3 origin to store a static website. The company’s security policy requires that all website traffic be inspected by AWS WAF.

D. Configure Amazon CloudFront and Amazon S3 to use an origin access identity (OAI) to restrict access to the S3 bucket. Enable AWS WAF on the distribution.

166.Organizers for a global event want to put daily reports online as static HTML pages. The pages are expected to generate millions of views from users around the world. The files are stored in an Amazon S3 bucket. A solutions architect has been asked to design an efficient and effective solution.

Which action should the solutions architect take to accomplish this?

D. Use Amazon CloudFront with the S3 bucket as its origin.

167.A company runs a production application on a fleet of Amazon EC2 instances. The application reads the data from an Amazon SQS queue and processes the messages in parallel. The message volume is unpredictable and often has intermittent traffic. This application should continually process messages without any downtime.

Which solution meets these requirements MOST cost-effectively?

C. Use Reserved Instances for the baseline capacity and use Spot Instances to handle additional capacity.

168.A security team wants to limit access to specific services or actions in all of the team’s AWS accounts. All accounts belong to a large organization in AWS Organizations. The solution must be scalable and there must be a single point where permissions can be maintained.

D. Create a service control policy in the root organizational unit to deny access to the services or actions.

169.A company is concerned about the security of its public web application due to recent web attacks. The application uses an Application Load Balancer (ALB). A solutions architect must reduce the risk of DDoS attacks against the application.

What should the solutions architect do to meet this requirement?

C. Enable AWS Shield Advanced to prevent attacks.

170.A company’s web application is running on Amazon EC2 instances behind an Application Load Balancer. The company recently changed its policy, which now requires the application to be accessed from one specific country only.

C. Configure AWS WAF on the Application Load Balancer in a VPC.

171.A company provides an API to its users that automates inquiries for tax computations based on item prices. The company experiences a larger number of inquiries during the holiday season only that cause slower response times. A solutions architect needs to design a solution that is scalable and elastic.

What should the solutions architect do to accomplish this?

B. Design a REST API using Amazon API Gateway that accepts the item names. API Gateway passes item names to AWS Lambda for tax computations.

IMP>>>>>>172.A solutions architect is creating a new Amazon CloudFront distribution for an application. Some of the information submitted by users is sensitive. The application uses HTTPS but needs another layer of security. The sensitive information should.be protected throughout the entire application stack, and access to the information should be restricted to certain applications.

Which action should the solutions architect take?

A. Configure a CloudFront signed URL.

B. Configure a CloudFront signed cookie.

C. Configure a CloudFront field-level encryption profile.

D. Configure CloudFront and set the Origin Protocol Policy setting to HTTPS Only for the Viewer Protocol Policy.

173.A gaming company hosts a browser-based application on AWS. The users of the application consume a large number of videos and images that are stored in Amazon S3. This content is the same for all users.

The application has increased in popularity, and millions of users worldwide accessing these media files. The company wants to provide the files to the users while reducing the load on the origin.

Which solution meets these requirements MOST cost-effectively?

B. Deploy an Amazon CloudFront web distribution in front of the S3 bucket.

174.A company has a multi-tier application that runs six front-end web servers in an Amazon EC2 Auto Scaling group in a single Availability Zone behind an Application Load Balancer (ALB). A solutions architect needs to modify the infrastructure to be highly available without modifying the application.

Which architecture should the solutions architect choose that provides high availability?

B. Modify the Auto Scaling group to use three instances across each of two Availability Zones.

175.An ecommerce company has an order-processing application that uses Amazon API Gateway and an AWS Lambda function. The application stores data in an Amazon Aurora PostgreSQL database. During a recent sales event, a sudden surge in customer orders occurred. Some customers experienced timeouts, and the application did not process the orders of those customers.

A solutions architect determined that the CPU utilization and memory utilization were high on the database because of a large number of open connections. The solutions architect needs to prevent the timeout errors while making the least possible changes to the application.

Which solution will meet these requirements?

B. Use Amazon RDS Proxy to create a proxy for the database. Modify the Lambda function to use the RDS Proxy endpoint instead of the database endpoint.

176.An application runs on Amazon EC2 instances in private subnets. The application needs to access an Amazon DynamoDB table.

What is the MOST secure way to access the table while ensuring that the traffic does not leave the AWS network?

A. Use a VPC endpoint for DynamoDB.

177.An entertainment company is using Amazon DynamoDB to store media metadata. The application is read intensive and experiencing delays. The company does not have staff to handle additional operational overhead and needs to improve the performance efficiency of DynamoDB without reconfiguring the application.

What should a solutions architect recommend to meet this requirement?

B. Use Amazon DynamoDB Accelerator (DAX).

IMP>>>>>>178.A company’s infrastructure consists of Amazon EC2 instances and an Amazon RDS DB instance in a single AWS Region. The company wants to back up its data in a separate Region.

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

A. Use AWS Backup to copy EC2 backups and RDS backups to the separate Region.

B. Use Amazon Data Lifecycle Manager (Amazon DLM) to copy EC2 backups and RDS backups to the separate Region.

C. Create Amazon Machine Images (AMIs) of the EC2 instances. Copy the AMIs to the separate Region. Create a read replica for the RDS DB instance in the separate Region.

D. Create Amazon Elastic Block Store (Amazon EBS) snapshots. Copy the EBS snapshots to the separate Region. Create RDS snapshots. Export the RDS snapshots to Amazon S3. Configure S3 Cross-Region Replication (CRR) to the separate Region.

IMP>>>>>179. A solutions architect needs to securely store a database user name and password that an application uses to access an Amazon RDS DB instance. The application that accesses the database runs on an Amazon EC2 instance. The solutions architect wants to create a secure parameter in AWS Systems Manager Parameter Store.

What should the solutions architect do to meet this requirement?

A. Create an IAM role that has read access to the Parameter Store parameter. Allow Decrypt access to an AWS Key Management Service (AWS KMS) key that is used to encrypt the parameter. Assign this IAM role to the EC2 instance.

B. Create an IAM policy that allows read access to the Parameter Store parameter. Allow Decrypt access to an AWS Key Management Service (AWS KMS) key that is used to encrypt the parameter. Assign this IAM policy to the EC2 instance.

C. Create an IAM trust relationship between the Parameter Store parameter and the EC2 instance. Specify Amazon RDS as a principal in the trust policy.

D. Create an IAM trust relationship between the DB instance and the EC2 instance. Specify Systems Manager as a principal in the trust policy.

180.A company is designing a cloud communications platform that is driven by APIs. The application is hosted on Amazon EC2 instances behind a Network Load Balancer (NLB). The company uses Amazon API Gateway to provide external users with access to the application through APIs. The company wants to protect the platform against web exploits like SQL injection and also wants to detect and mitigate large, sophisticated DDoS attacks.

Which combination of solutions provides the MOST protection? (Choose two.)

B. Use AWS Shield Advanced with the NLB.

C. Use AWS WAF to protect Amazon API Gateway.

181.A company has a legacy data processing application that runs on Amazon EC2 instances. Data is processed sequentially, but the order of results does not matter. The application uses a monolithic architecture. The only way that the company can scale the application to meet increased demand is to increase the size of the instances.

The company’s developers have decided to rewrite the application to use a microservices architecture on Amazon Elastic Container Service (Amazon ECS).

What should a solutions architect recommend for communication between the microservices?

A. Create an Amazon Simple Queue Service (Amazon SQS) queue. Add code to the data producers, and send data to the queue. Add code to the data consumers to process data from the queue.

182.A company wants to migrate its MySQL database from on premises to AWS. The company recently experienced a database outage that significantly impacted the business. To ensure this does not happen again, the company wants a reliable database solution on AWS that minimizes data loss and stores every transaction on at least two nodes.

Which solution meets these requirements?

B. Create an Amazon RDS MySQL DB instance with Multi-AZ functionality enabled to synchronously replicate the data.

183.A company is building a new dynamic ordering website. The company wants to minimize server maintenance and patching. The website must be highly available and must scale read and write capacity as quickly as possible to meet changes in user demand.

Which solution will meet these requirements?

A. Host static content in Amazon S3. Host dynamic content by using Amazon API Gateway and AWS Lambda. Use Amazon DynamoDB with on-demand capacity for the database. Configure Amazon CloudFront to deliver the website content.

IMP>>>>>>>184.A company has an AWS account used for software engineering. The AWS account has access to the company’s on-premises data center through a pair of AWS Direct Connect connections. All non-VPC traffic routes to the virtual private gateway.

A development team recently created an AWS Lambda function through the console. The development team needs to allow the function to access a database that runs in a private subnet in the company’s data center.

Which solution will meet these requirements?

A. Configure the Lambda function to run in the VPC with the appropriate security group.

B. Set up a VPN connection from AWS to the data center. Route the traffic from the Lambda function through the VPN.

C. Update the route tables in the VPC to allow the Lambda function to access the on-premises data center through Direct Connect.

D. Create an Elastic IP address. Configure the Lambda function to send traffic through the Elastic IP address without an elastic network interface.

185.A company runs an application using Amazon ECS. The application creates resized versions of an original image and then makes Amazon S3 API calls to store the resized images in Amazon S3.

How can a solutions architect ensure that the application has permission to access Amazon S3?

B. Create an IAM role with S3 permissions, and then specify that role as the taskRoleArn in the task definition.

186] A company has a Windows-based application that must be migrated to AWS. The application requires the use of a shared Windows file system attached to multiple Amazon EC2 Windows instances that are deployed across multiple Availability Zone:

What should a solutions architect do to meet this requirement?

B. Configure Amazon FSx for Windows File Server. Mount the Amazon FSx file system to each Windows instance.

Amazon FSx for Windows File Server provides a fully managed Windows file system that can be accessed by multiple EC2 instances. It is designed to provide shared file storage for Windows-based applications. It supports the SMB protocol, allowing Windows instances to mount the file system. Amazon FSx for Windows File Server is fully managed, highly available, and provides features like automatic backups and integration with Active Directory.

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187] A company is developing an ecommerce application that will consist of a load-balanced front end, a container-based application, and a relational database. A solutions architect needs to create a highly available solution that operates with as little manual intervention as possible.

Which solutions meet these requirements? (Choose two.)

A. Create an Amazon RDS DB instance in Multi-AZ mode.

D. Create an Amazon Elastic Container Service (Amazon ECS) cluster with a Fargate launch type to handle the dynamic application load.

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188] A company uses Amazon S3 as its data lake. The company has a new partner that must use SFTP to upload data files. A solutions architect needs to implement a highly available SFTP solution that minimizes operational overhead.

Which solution will meet these requirements?

A. Use AWS Transfer Family to configure an SFTP-enabled server with a publicly accessible endpoint. Choose the S3 data lake as the destination.

AWS Transfer Family is a fully managed service that allows you to set up a secure file transfer protocol (SFTP) server for transferring files into and out of Amazon S3. With AWS Transfer Family, you can avoid the operational overhead of managing traditional SFTP servers. This solution provides a highly available SFTP service with minimal effort, and the data can be directly transferred to the S3 data lake.

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189] A company needs to store contract documents. A contract lasts for 5 years. During the 5-year period, the company must ensure that the documents cannot be overwritten or deleted. The company needs to encrypt the documents at rest and rotate the encryption keys automatically every year.

Which combination of steps should a solutions architect take to meet these requirements with the LEAST operational overhead? (Choose two.)

B. Store the documents in Amazon S3. Use S3 Object Lock in compliance mode.

S3 Object Lock in compliance mode enforces a "Write Once, Read Many" (WORM) model, preventing the objects (contract documents, in this case) from being deleted or overwritten for a specified retention period.

D. Use server-side encryption with AWS Key Management Service (AWS KMS) customer managed keys. Configure key rotation.

By using AWS KMS customer managed keys, you can configure key rotation to automatically rotate encryption keys, meeting the requirement of rotating encryption keys every year.

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190] A company has a web application that is based on Java and PHP. The company plans to move the application from on premises to AWS. The company needs the ability to test new site features frequently. The company also needs a highly available and managed solution that requires minimum operational overhead.

Which solution will meet these requirements?

B. Deploy the web application to an AWS Elastic Beanstalk environment. Use URL swapping to switch between multiple Elastic Beanstalk environments for feature testing.

Elastic Beanstalk allows you to perform blue-green deployments, which involve creating a new environment (green) with the updated code, testing it, and then swapping the URLs to direct traffic to the new environment. This enables you to test new features without affecting the production environment.

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201] A company is developing a marketing communications service that targets mobile app users. The company needs to send its users confirmation messages with Short Message Service (SMS). The users must be able to reply to the SMS messages. The company must store the responses for a year for analysis.

What should a solutions architect do to meet these requirements?

B. Build an Amazon Pinpoint journey. Configure Amazon Pinpoint to send events to an Amazon Kinesis data stream for analysis and archiving.

Amazon Pinpoint is a fully managed service for sending messages to mobile app users. With Amazon Pinpoint journeys, you can create multi-step campaigns to engage with users. By configuring Amazon Pinpoint to send events to an Amazon Kinesis data stream, you can capture the responses for further analysis and archiving. This solution provides a comprehensive approach to managing SMS messages and their responses in a scalable and efficient manner.

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202] A company is planning to move its data to an Amazon S3 bucket. The data must be encrypted when it is stored in the S3 bucket. Additionally, the encryption key must be automatically rotated every year.

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

B. Create an AWS Key Management Service (AWS KMS) customer managed key. Enable automatic key rotation. Set the S3 bucket’s default encryption behavior to use the customer managed KMS key. Move the data to the S3 bucket.

In this option, you use AWS KMS to create a customer managed key, enable automatic key rotation, and set it as the default encryption key for the S3 bucket. This ensures that the data is encrypted with a key managed by AWS KMS, and the key rotation is handled automatically. This approach minimizes manual intervention and provides a secure and automated solution for data encryption with key rotation.

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203] The customers of a finance company request appointments with financial advisors by sending text messages. A web application that runs on Amazon EC2 instances accepts the appointment requests. The text messages are published to an Amazon Simple Queue Service (Amazon SQS) queue through the web application. Another application that runs on EC2 instances then sends meeting invitations and meeting confirmation email messages to the customers. After successful scheduling, this application stores the meeting information in an Amazon DynamoDB database.

As the company expands, customers report that their meeting invitations are taking longer to arrive.

What should a solutions architect recommend to resolve this issue?

D. Add an Auto Scaling group for the application that sends meeting invitations. Configure the Auto Scaling group to scale based on the depth of the SQS queue.

To resolve the issue of longer delivery times for meeting invitations, the solutions architect can recommend adding an Auto Scaling group for the application that sends meeting invitations and configuring the Auto Scaling group to scale based on the depth of the SQS queue. This will allow the application to scale up as the number of appointment requests increases, improving the performance and delivery times of the meeting invitations.

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204] An online retail company has more than 50 million active customers and receives more than 25,000 orders each day. The company collects purchase data for customers and stores this data in Amazon S3. Additional customer data is stored in Amazon RDS.

The company wants to make all the data available to various teams so that the teams can perform analytics. The solution must provide the ability to manage fine-grained permissions for the data and must minimize operational overhead.

Which solution will meet these requirements?

C. Create a data lake by using AWS Lake Formation. Create an AWS Glue JDBC connection to Amazon RDS. Register the S3 bucket in Lake Formation. Use Lake Formation access controls to limit access.

AWS Lake Formation is designed to create a secure and scalable data lake in Amazon S3. By creating a data lake with Lake Formation, you can centrally manage access controls, fine-grained permissions, and define granular data access policies. This simplifies the process of granting and managing permissions for various teams.

In this scenario, you can use AWS Glue to create a JDBC connection to Amazon RDS for accessing the additional customer data. The S3 bucket, where the purchase data is stored, can be registered in Lake Formation. Lake Formation allows you to set up fine-grained access controls and permissions, providing the ability to manage who can access specific data within the data lake.

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205] A company hosts a marketing website in an on-premises data center. The website consists of static documents and runs on a single server. An administrator updates the website content infrequently and uses an SFTP client to upload new documents.

The company decides to host its website on AWS and to use Amazon CloudFront. The company’s solutions architect creates a CloudFront distribution. The solutions architect must design the most cost-effective and resilient architecture for website hosting to serve as the CloudFront origin.

Which solution will meet these requirements?

C. Create a private Amazon S3 bucket. Use an S3 bucket policy to allow access from a CloudFront origin access identity (OAI). Upload website content by using the AWS CLI.

This option leverages Amazon S3 as the origin for CloudFront. By creating a private S3 bucket and using a bucket policy to allow access from a CloudFront origin access identity (OAI), you ensure that the content is served securely from S3 and that only CloudFront can access the bucket.

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206] A company wants to manage Amazon Machine Images (AMIs). The company currently copies AMIs to the same AWS Region where the AMIs were created. The company needs to design an application that captures AWS API calls and sends alerts whenever the Amazon EC2 CreateImage API operation is called within the company’s account.

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

C. Create an Amazon EventBridge (Amazon CloudWatch Events) rule for the CreateImage API call. Configure the target as an Amazon Simple Notification Service (Amazon SNS) topic to send an alert when a CreateImage API call is detected.

Amazon EventBridge (formerly CloudWatch Events) provides a simple and efficient way to respond to events in AWS services. By creating an EventBridge rule specifically for the CreateImage API call, you can easily configure an SNS topic as the target to send alerts when the event is detected.

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208] A company needs to move data from an Amazon EC2 instance to an Amazon S3 bucket. The company must ensure that no API calls and no data are routed through public internet routes. Only the EC2 instance can have access to upload data to the S3 bucket.

Which solution will meet these requirements?

A. Create an interface VPC endpoint for Amazon S3 in the subnet where the EC2 instance is located. Attach a resource policy to the S3 bucket to only allow the EC2 instance’s IAM role for access.

Interface VPC endpoints for Amazon S3 (powered by AWS PrivateLink) allow communication between resources in your VPC and Amazon S3 without relying on public internet routes. It provides a secure and private connection.

By creating an interface VPC endpoint for Amazon S3 in the subnet where the EC2 instance is located, you ensure that the data doesn't travel over the public internet.

Attaching a resource policy to the S3 bucket allows you to control access and restrict it to the IAM role associated with the EC2 instance, ensuring only authorized entities can upload data to the bucket.

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209] A solutions architect is designing the architecture of a new application being deployed to the AWS Cloud. The application will run on Amazon EC2 On-Demand Instances and will automatically scale across multiple Availability Zones. The EC2 instances will scale up and down frequently throughout the day. An Application Load Balancer (ALB) will handle the load distribution. The architecture needs to support distributed session data management. The company is willing to make changes to code if needed.

What should the solutions architect do to ensure that the architecture supports distributed session data management?

A. Use Amazon ElastiCache to manage and store session data.

Amazon ElastiCache is a fully managed, in-memory data store service. It is commonly used for caching and session management in distributed applications.

By utilizing ElastiCache for session data management, you can store and retrieve session data in a scalable and high-performance manner.

The use of ElastiCache allows for a distributed and shared data store for session management across multiple instances and Availability Zones.

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211] A company hosts multiple production applications. One of the applications consists of resources from Amazon EC2, AWS Lambda, Amazon RDS, Amazon Simple Notification Service (Amazon SNS), and Amazon Simple Queue Service (Amazon SQS) across multiple AWS Regions. All company resources are tagged with a tag name of “application” and a value that corresponds to each application. A solutions architect must provide the quickest solution for identifying all of the tagged components.

Which solution meets these requirements?

D. Run a query with the AWS Resource Groups Tag Editor to report on the resources globally with the application tag.

AWS Resource Groups Tag Editor allows you to search and filter resources based on tags across multiple AWS Regions.

It provides a centralized view of resources and their corresponding tags, making it easier to identify and manage resources with specific tags.

This option provides a quick and efficient way to report on resources with the application tag globally.

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212] A company needs to export its database once a day to Amazon S3 for other teams to access. The exported object size varies between 2 GB and 5 GB. The S3 access pattern for the data is variable and changes rapidly. The data must be immediately available and must remain accessible for up to 3 months. The company needs the most cost-effective solution that will not increase retrieval time.

Which S3 storage class should the company use to meet these requirements?

A. S3 Intelligent-Tiering

S3 Intelligent-Tiering is designed to optimize costs by automatically moving objects between two access tiers: frequent and infrequent access. It is suitable for data with unknown or changing access patterns.

With S3 Intelligent-Tiering, Amazon S3 automatically and transparently moves objects between access tiers based on changing access patterns. It is cost-effective for a wide range of storage access patterns.

The objects can be immediately accessed, and the storage cost is lower than using S3 Standard, making it a suitable choice for varying access patterns.

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213] A company is developing a new mobile app. The company must implement proper traffic filtering to protect its Application Load Balancer (ALB) against common application-level attacks, such as cross-site scripting or SQL injection. The company has minimal infrastructure and operational staff. The company needs to reduce its share of the responsibility in managing, updating, and securing servers for its AWS environment.

What should a solutions architect recommend to meet these requirements?

A. Configure AWS WAF rules and associate them with the ALB.

AWS WAF (Web Application Firewall) is a service that helps protect web applications from common web exploits by allowing you to define customizable web security rules. It can be associated with an Application Load Balancer (ALB) to filter and block malicious traffic before it reaches the application.

AWS WAF is a managed service, which means it reduces the operational burden on the company by handling the infrastructure, updates, and security configurations.

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214] A company’s reporting system delivers hundreds of .csv files to an Amazon S3 bucket each day. The company must convert these files to Apache Parquet format and must store the files in a transformed data bucket.

Which solution will meet these requirements with the LEAST development effort?

B. Create an AWS Glue crawler to discover the data. Create an AWS Glue extract, transform, and load (ETL) job to transform the data. Specify the transformed data bucket in the output step.

AWS Glue is a fully managed extract, transform, and load (ETL) service that makes it easy to prepare and load data for analysis. In this scenario:

The AWS Glue crawler can automatically discover the schema of your data stored in Amazon S3, including the .csv files.

The AWS Glue ETL job allows you to define the transformation logic easily. You can create a job using a visual interface or script in Python/Spark.

You can specify the transformed data bucket as the output location for the ETL job.

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215] A company has 700 TB of backup data stored in network attached storage (NAS) in its data center. This backup data need to be accessible for infrequent regulatory requests and must be retained 7 years. The company has decided to migrate this backup data from its data center to AWS. The migration must be complete within 1 month. The company has 500 Mbps of dedicated bandwidth on its public internet connection available for data transfer.

What should a solutions architect do to migrate and store the data at the LOWEST cost?

A. Order AWS Snowball devices to transfer the data. Use a lifecycle policy to transition the files to Amazon S3 Glacier Deep Archive.

AWS Snowball: AWS Snowball is a physical data transfer service that allows you to securely transfer large amounts of data into and out of AWS. In this scenario, with 700 TB of data, using Snowball devices can expedite the transfer process. It's a one-time cost-efficient solution for large data transfers.

Amazon S3 Glacier Deep Archive: After transferring the data to Amazon S3 using Snowball, you can use a lifecycle policy to transition the files to Amazon S3 Glacier Deep Archive. This storage class is designed for infrequently accessed data with a retention requirement of 7 years, aligning with the regulatory compliance needs.

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216] A company has a serverless website with millions of objects in an Amazon S3 bucket. The company uses the S3 bucket as the origin for an Amazon CloudFront distribution. The company did not set encryption on the S3 bucket before the objects were loaded. A solutions architect needs to enable encryption for all existing objects and for all objects that are added to the S3 bucket in the future.

Which solution will meet these requirements with the LEAST amount of effort?

B. Turn on the default encryption settings for the S3 bucket. Use the S3 Inventory feature to create a .csv file that lists the unencrypted objects. Run an S3 Batch Operations job that uses the copy command to encrypt those objects.

This option utilizes the S3 Inventory feature to generate a list of unencrypted objects in the S3 bucket. It then leverages S3 Batch Operations to perform a copy operation, allowing the encryption of the objects during the copy process. This approach is efficient and does not require downloading and re-uploading all existing objects.

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217] A company runs a global web application on Amazon EC2 instances behind an Application Load Balancer. The application stores data in Amazon Aurora. The company needs to create a disaster recovery solution and can tolerate up to 30 minutes of downtime and potential data loss. The solution does not need to handle the load when the primary infrastructure is healthy.

What should a solutions architect do to meet these requirements?

A. Deploy the application with the required infrastructure elements in place. Use Amazon Route 53 to configure active-passive failover. Create an Aurora Replica in a second AWS Region.

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218] A company has a web server running on an Amazon EC2 instance in a public subnet with an Elastic IP address. The default security group is assigned to the EC2 instance. The default network ACL has been modified to block all traffic. A solutions architect needs to make the web server accessible from everywhere on port 443.

Which combination of steps will accomplish this task? (Choose two.)

A. Create a security group with a rule to allow TCP port 443 from source 0.0.0.0/0.

E. Update the network ACL to allow inbound TCP port 443 from source 0.0.0.0/0 and outbound TCP port 32768-65535 to destination 0.0.0.0/0.

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219] A company’s application is having performance issues. The application is stateful and needs to complete in-memory tasks on Amazon EC2 instances. The company used AWS CloudFormation to deploy infrastructure and used the M5 EC2 instance family. As traffic increased, the application performance degraded. Users are reporting delays when the users attempt to access the application.

Which solution will resolve these issues in the MOST operationally efficient way?

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220] A solutions architect is designing a new API using Amazon API Gateway that will receive requests from users. The volume of requests is highly variable; several hours can pass without receiving a single request. The data processing will take place asynchronously, but should be completed within a few seconds after a request is made.

Which compute service should the solutions architect have the API invoke to deliver the requirements at the lowest cost?

B. An AWS Lambda function

AWS Lambda supports asynchronous invocation, which is suitable for scenarios where data processing can take place independently of the API request and complete within a few seconds. This aligns with the requirement of processing data asynchronously.

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221] A company runs an application on a group of Amazon Linux EC2 instances. For compliance reasons, the company must retain all application log files for 7 years. The log files will be analyzed by a reporting tool that must be able to access all the files concurrently.

Which storage solution meets these requirements MOST cost-effectively?

D. Amazon S3

S3 is a highly durable and scalable object storage service. It is designed for high availability and can store large amounts of data. S3 is cost-effective for long-term storage, and its pricing is based on the amount of data stored.

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222] A company has hired an external vendor to perform work in the company’s AWS account. The vendor uses an automated tool that is hosted in an AWS account that the vendor owns. The vendor does not have IAM access to the company’s AWS account.

How should a solutions architect grant this access to the vendor?

A. Create an IAM role in the company’s account to delegate access to the vendor’s IAM role. Attach the appropriate IAM policies to the role for the permissions that the vendor requires.

IAM roles allow you to delegate access to resources in your AWS account to another AWS account. In this case, you can create a role in your account and grant the vendor's IAM role permission to assume that role.

By doing this, the vendor can use temporary security credentials obtained by assuming the role to access resources in your account. This ensures that the vendor doesn't need IAM credentials from your account.

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223] A company has deployed a Java Spring Boot application as a pod that runs on Amazon Elastic Kubernetes Service (Amazon EKS) in private subnets. The application needs to write data to an Amazon DynamoDB table. A solutions architect must ensure that the application can interact with the DynamoDB table without exposing traffic to the internet.

Which combination of steps should the solutions architect take to accomplish this goal? (Choose two.)

A. Attach an IAM role that has sufficient privileges to the EKS pod. Most Voted

D. Create a VPC endpoint for DynamoDB. Most Voted

This IAM role should have the necessary permissions to interact with DynamoDB. You can attach the IAM role to the pod using Kubernetes service account annotations or other mechanisms.

By creating a VPC endpoint for DynamoDB, you allow your EKS pods to access DynamoDB directly within the AWS network without traversing the public internet. This enhances security and reduces the risk of exposure.

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225] A media company collects and analyzes user activity data on premises. The company wants to migrate this capability to AWS. The user activity data store will continue to grow and will be petabytes in size. The company needs to build a highly available data ingestion solution that facilitates on-demand analytics of existing data and new data with SQL.

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

B. Send activity data to an Amazon Kinesis Data Firehose delivery stream. Configure the stream to deliver the data to an Amazon Redshift cluster.

Amazon Kinesis Data Firehose: It is a fully managed service that simplifies the delivery of streaming data to destinations such as Amazon S3, Amazon Redshift, or Amazon Elasticsearch Service. It handles the scaling, buffering, and delivery of data.

Amazon Redshift: It is a fully managed, petabyte-scale data warehouse service. It is optimized for high-performance analysis using standard SQL queries.

Least Operational Overhead: Kinesis Data Firehose takes care of many operational aspects, including scaling and buffering, reducing the operational overhead on your part. Configuring it to deliver data to Amazon Redshift provides a streamlined and managed solution.

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226] A company collects data from thousands of remote devices by using a RESTful web services application that runs on an Amazon EC2 instance. The EC2 instance receives the raw data, transforms the raw data, and stores all the data in an Amazon S3 bucket. The number of remote devices will increase into the millions soon. The company needs a highly scalable solution that minimizes operational overhead.

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

A. Use AWS Glue to process the raw data in Amazon S3.

E. Use Amazon API Gateway to send the raw data to an Amazon Kinesis data stream. Configure Amazon Kinesis Data Firehose to use the data stream as a source to deliver the data to Amazon S3.

A. It automatically discovers the schema of the data and generates ETL code to transform it.

E. API Gateway can be used to receive the raw data from the remote devices via RESTful web services. It provides a scalable and managed infrastructure to handle the incoming requests. The data can then be sent to an Amazon Kinesis data stream, which is a highly scalable and durable real-time data streaming service. From there, Amazon Kinesis Data Firehose can be configured to use the data stream as a source and deliver the transformed data to Amazon S3. This combination of services allows for the seamless ingestion and processing of data while minimizing operational overhead.

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227] A company needs to retain its AWS CloudTrail logs for 3 years. The company is enforcing CloudTrail across a set of AWS accounts by using AWS Organizations from the parent account. The CloudTrail target S3 bucket is configured with S3 Versioning enabled. An S3 Lifecycle policy is in place to delete current objects after 3 years.

After the fourth year of use of the S3 bucket, the S3 bucket metrics show that the number of objects has continued to rise. However, the number of new CloudTrail logs that are delivered to the S3 bucket has remained consistent.

Which solution will delete objects that are older than 3 years in the MOST cost-effective manner?

B. Configure the S3 Lifecycle policy to delete previous versions as well as current versions.

S3 Lifecycle Policy: Enabling S3 versioning allows you to use a lifecycle policy to manage both current and previous versions of objects in the bucket. By configuring the S3 Lifecycle policy to delete objects older than 3 years, it will automatically delete both the current and previous versions that meet the specified criteria.

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228] A company has an API that receives real-time data from a fleet of monitoring devices. The API stores this data in an Amazon RDS DB instance for later analysis. The amount of data that the monitoring devices send to the API fluctuates. During periods of heavy traffic, the API often returns timeout errors.

After an inspection of the logs, the company determines that the database is not capable of processing the volume of write traffic that comes from the API. A solutions architect must minimize the number of connections to the database and must ensure that data is not lost during periods of heavy traffic.

Which solution will meet these requirements?

C. Modify the API to write incoming data to an Amazon Simple Queue Service (Amazon SQS) queue. Use an AWS Lambda function that Amazon SQS invokes to write data from the queue to the database.

Amazon SQS: SQS is a fully managed message queuing service that decouples the components of a cloud application. It acts as a buffer between the API and the database, allowing for better handling of varying write traffic.

AWS Lambda: Using Lambda to process the data from the SQS queue helps in efficiently managing the connection to the database. Lambda functions can be scaled automatically based on the incoming workload.

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229] A company manages its own Amazon EC2 instances that run MySQL databases. The company is manually managing replication and scaling as demand increases or decreases. The company needs a new solution that simplifies the process of adding or removing compute capacity to or from its database tier as needed. The solution also must offer improved performance, scaling, and durability with minimal effort from operations.

Which solution meets these requirements?

A. Migrate the databases to Amazon Aurora Serverless for Aurora MySQL.

Amazon Aurora Serverless: Aurora Serverless is an on-demand, auto-scaling configuration for Amazon Aurora. It automatically adjusts the database capacity based on actual consumption, enabling seamless scaling without manual intervention. It is a fully managed service, reducing operational overhead.

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230] A company is concerned that two NAT instances in use will no longer be able to support the traffic needed for the company’s application. A solutions architect wants to implement a solution that is highly available, fault tolerant, and automatically scalable.

What should the solutions architect recommend?

C. Remove the two NAT instances and replace them with two NAT gateways in different Availability Zones.

NAT Gateway: NAT Gateways are managed, highly available, and scalable components provided by AWS. They are designed to handle the network address translation for instances in private subnets. By deploying NAT gateways in different Availability Zones, you ensure high availability.

Benefits of NAT Gateway:

Managed Service: NAT Gateway is a fully managed service, reducing operational overhead.

High Availability: Deploying NAT gateways in different Availability Zones ensures fault tolerance and high availability.

Automatically Scalable: NAT Gateways automatically scale based on the traffic volume, eliminating the need for manual adjustments.

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231] An application runs on an Amazon EC2 instance that has an Elastic IP address in VPC A. The application requires access to a database in VPC B. Both VPCs are in the same AWS account.

Which solution will provide the required access MOST securely?

B. Configure a VPC peering connection between VPC A and VPC B.

VPC peering allows direct connectivity between two VPCs. This solution enables communication between instances in VPC A and VPC B using private IP addresses. It does not require public IP addresses or the exposure of databases to the public internet.

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232] A company runs demonstration environments for its customers on Amazon EC2 instances. Each environment is isolated in its own VPC. The company’s operations team needs to be notified when RDP or SSH access to an environment has been established.

B. Configure the EC2 instances with an IAM instance profile that has an IAM role with the AmazonSSMManagedInstanceCore policy attached.

The correct option for notifying the operations team when RDP or SSH access to an environment has been established is:

C. Publish VPC flow logs to Amazon CloudWatch Logs. Create required metric filters. Create an Amazon CloudWatch metric alarm with a notification action for when the alarm is in the ALARM state.

Here's why:

VPC Flow Logs:\*\* VPC flow logs capture information about the IP traffic going to and from network interfaces in your VPC. This includes information about accepted and rejected connections. To monitor RDP or SSH access, you can analyze these logs.

CloudWatch Logs:\*\* By publishing VPC flow logs to CloudWatch Logs, you can analyze the logs using metric filters to extract relevant information.

Metric Filters:\*\* Create metric filters to match the patterns corresponding to RDP or SSH access in the CloudWatch Logs. For example, you can create metric filters that look for specific keywords or patterns related to RDP or SSH connections.

CloudWatch Metric Alarm:\*\* Set up CloudWatch metric alarms based on the metric filters. When the alarm is triggered (indicating that RDP or SSH access has been detected), it can take a notification action, such as sending a notification to the operations team via Amazon SNS.

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233] A solutions architect has created a new AWS account and must secure AWS account root user access.

Which combination of actions will accomplish this? (Choose two.)

A. Ensure the root user uses a strong password.

B. Enable multi-factor authentication to the root user.

Using a strong, complex password for the root user is a fundamental security practice. This helps protect the account from unauthorized access.

Enabling MFA adds an additional layer of security. Even if someone manages to obtain the root user's password, they would still need the second factor (e.g., a mobile device or hardware token) to successfully authenticate.

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234] A company is building a new web-based customer relationship management application. The application will use several Amazon EC2 instances that are backed by Amazon Elastic Block Store (Amazon EBS) volumes behind an Application Load Balancer (ALB). The application will also use an Amazon Aurora database. All data for the application must be encrypted at rest and in transit.

Which solution will meet these requirements?

C. Use AWS Key Management Service (AWS KMS) to encrypt the EBS volumes and Aurora database storage at rest. Attach an AWS Certificate Manager (ACM) certificate to the ALB to encrypt data in transit.

Using AWS KMS to encrypt EBS volumes and Aurora database storage at rest is a good practice. You can specify a KMS key when creating these resources to ensure data encryption.

Attaching an ACM certificate to the ALB allows you to use HTTPS, which encrypts data in transit between clients and the ALB. This ensures secure communication over the network.

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236] A company has a three-tier application for image sharing. The application uses an Amazon EC2 instance for the front-end layer, another EC2 instance for the application layer, and a third EC2 instance for a MySQL database. A solutions architect must design a scalable and highly available solution that requires the least amount of change to the application.

Which solution meets these requirements?

D. Use load-balanced Multi-AZ AWS Elastic Beanstalk environments for the front-end layer and the application layer. Move the database to an Amazon RDS Multi-AZ DB instance. Use Amazon S3 to store and serve users’ images.

AWS Elastic Beanstalk provides an easy way to deploy and manage applications. By using Multi-AZ environments, the front-end and application layers can automatically scale and provide high availability across multiple Availability Zones (AZs).

Amazon RDS Multi-AZ DB Instance:

Moving the database to an Amazon RDS Multi-AZ DB instance ensures high availability and automatic failover in the event of a failure in one Availability Zone.

Amazon S3 for Storing and Serving Images:

Using Amazon S3 for storing and serving users' images is a scalable and cost-effective solution. S3 is designed for high durability and availability, making it suitable for serving static content like images.

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237] An application running on an Amazon EC2 instance in VPC-A needs to access files in another EC2 instance in VPC-B. Both VPCs are in separate AWS accounts. The network administrator needs to design a solution to configure secure access to EC2 instance in VPC-B from VPC-A. The connectivity should not have a single point of failure or bandwidth concerns.

Which solution will meet these requirements?

A. Set up a VPC peering connection between VPC-A and VPC-B.

A VPC peering connection allows secure communication between instances in different VPCs using private IP addresses without the need for internet gateways, VPN connections, or NAT devices. By setting it up, the application running in VPC-A can directly access the EC2 in VPC-B without going through the public internet or any single point of failure.

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238] A company wants to experiment with individual AWS accounts for its engineer team. The company wants to be notified as soon as the Amazon EC2 instance usage for a given month exceeds a specific threshold for each account.

What should a solutions architect do to meet this requirement MOST cost-effectively?

C. Use AWS Budgets to create a cost budget for each account. Set the period to monthly. Set the scope to EC2 instances. Set an alert threshold for the budget. Configure an Amazon Simple Notification Service (Amazon SNS) topic to receive a notification when a threshold is exceeded.

AWS Budgets is a cost management service that allows you to set custom cost and usage budgets that alert you when you exceed your thresholds. In this case, you can create a monthly budget specifically for EC2 instances, and when the usage exceeds the defined threshold, it triggers an alert.

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239] A solutions architect needs to design a new microservice for a company’s application. Clients must be able to call an HTTPS endpoint to reach the microservice. The microservice also must use AWS Identity and Access Management (IAM) to authenticate calls. The solutions architect will write the logic for this microservice by using a single AWS Lambda function that is written in Go 1.x.

Which solution will deploy the function in the MOST operationally efficient way?

A. Create an Amazon API Gateway REST API. Configure the method to use the Lambda function. Enable IAM authentication on the API.

This option is specifically designed for creating APIs and provides features such as authentication, request validation, and more. It allows you to create a REST API, configure a method to invoke the Lambda function, and enable IAM authentication. This provides a dedicated and managed API endpoint for clients to call securely.

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240] A company previously migrated its data warehouse solution to AWS. The company also has an AWS Direct Connect connection. Corporate office users query the data warehouse using a visualization tool. The average size of a query returned by the data warehouse is 50 MB and each webpage sent by the visualization tool is approximately 500 KB. Result sets returned by the data warehouse are not cached.

Which solution provides the LOWEST data transfer egress cost for the company?

D. Host the visualization tool in the same AWS Region as the data warehouse and access it over a Direct Connect connection at a location in the same Region.

Hosting the visualization tool in the same AWS Region as the data warehouse and accessing it over a Direct Connect connection within the same Region minimizes data transfer costs. Since the data warehouse and the visualization tool are in the same Region, the data transfer between them doesn't incur the usual costs associated with data leaving the AWS network.

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241] n online learning company is migrating to the AWS Cloud. The company maintains its student records in a PostgreSQL database. The company needs a solution in which its data is available and online across multiple AWS Regions at all times.

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

C. Migrate the PostgreSQL database to an Amazon RDS for PostgreSQL DB instance. Create a read replica in another Region.

Amazon RDS for PostgreSQL allows you to create read replicas in different AWS Regions. This provides cross-Region availability and redundancy. Additionally, it allows you to offload read traffic from the primary database.

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242] A company hosts its web application on AWS using seven Amazon EC2 instances. The company requires that the IP addresses of all healthy EC2 instances be returned in response to DNS queries.

Which policy should be used to meet this requirement?

C. Multivalue routing policy

The multivalue routing policy returns multiple healthy IP addresses for the resource in response to DNS queries. This is suitable for distributing traffic across multiple resources, such as EC2 instances, and meeting the specified requirement.

Simple Routing: Gives one answer (IP address).

Latency Routing: Considers the fastest route but still gives one answer.

Multivalue Routing: Gives multiple answers (multiple IP addresses).

Geolocation Routing: Directs based on user location but typically gives one answer.

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243] A medical research lab produces data that is related to a new study. The lab wants to make the data available with minimum latency to clinics across the country for their on-premises, file-based applications. The data files are stored in an Amazon S3 bucket that has read-only permissions for each clinic.

What should a solutions architect recommend to meet these requirements?

A. Deploy an AWS Storage Gateway file gateway as a virtual machine (VM) on premises at each clinic

This option provides a way to present an S3 bucket as a file system to on-premises applications. Each clinic can deploy an AWS Storage Gateway file gateway as a VM on-premises, allowing them to access the data in the S3 bucket as if it were local files. It minimizes latency because the data is cached locally, and read-only permissions can be controlled at the S3 bucket level.

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244] A company is using a content management system that runs on a single Amazon EC2 instance. The EC2 instance contains both the web server and the database software. The company must make its website platform highly available and must enable the website to scale to meet user demand.

What should a solutions architect recommend to meet these requirements?

C. Move the database to Amazon Aurora with a read replica in another Availability Zone. Create an Amazon Machine Image (AMI) from the EC2 instance. Configure an Application Load Balancer in two Availability Zones. Attach an Auto Scaling group that uses the AMI across two Availability Zones.

This option provides both high availability and scalability. Using Amazon Aurora with a read replica in another Availability Zone ensures data redundancy and failover capabilities. Configuring an Application Load Balancer across two Availability Zones and using Auto Scaling allows for scalability.

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245] A company is launching an application on AWS. The application uses an Application Load Balancer (ALB) to direct traffic to at least two Amazon EC2 instances in a single target group. The instances are in an Auto Scaling group for each environment. The company requires a development environment and a production environment. The production environment will have periods of high traffic.

Which solution will configure the development environment MOST cost-effectively?

A. Reconfigure the target group in the development environment to have only one EC2 instance as a target.

For a development environment, where high availability and scalability might not be as critical as in production, having only one EC2 instance as a target in the target group could be a cost-effective solution. This reduces the number of running instances in the development environment when compared to production.

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246] A company runs a web application on Amazon EC2 instances in multiple Availability Zones. The EC2 instances are in private subnets. A solutions architect implements an internet-facing Application Load Balancer (ALB) and specifies the EC2 instances as the target group. However, the internet traffic is not reaching the EC2 instances.

How should the solutions architect reconfigure the architecture to resolve this issue?

D. Create public subnets in each Availability Zone. Associate the public subnets with the ALB. Update the route tables for the public subnets with a route to the private subnets.

This option involves creating public subnets for the ALB, allowing it to receive internet traffic. The EC2 instances can remain in private subnets. This approach follows the best practice of using public subnets for internet-facing components like ALBs.

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247] A company has deployed a database in Amazon RDS for MySQL. Due to increased transactions, the database support team is reporting slow reads against the DB instance and recommends adding a read replica.

Which combination of actions should a solutions architect take before implementing this change? (Choose two.)

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248] Users report that some submitted data is not being processed Amazon CloudWatch reveals that the EC2 instances have a consistent CPU utilization at or near 100%. The company wants to improve system performance and scale the system based on user load.

What should a solutions architect do to meet these requirements?

D. Route incoming requests to Amazon Simple Queue Service (Amazon SQS). Configure an EC2 Auto Scaling group based on queue size. Update the software to read from the queue.

This option addresses the issue by offloading incoming requests to an SQS queue, allowing for decoupling of processing and scaling based on queue size. This helps improve system performance and allows for scaling based on user load.

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249] Question #249Topic 1

A company is implementing a shared storage solution for a media application that is hosted in the AWS Cloud. The company needs the ability to use SMB clients to access data. The solution must be fully managed.

Which AWS solution meets these requirements?

D. Create an Amazon FSx for Windows File Server file system. Attach the file system to the origin server. Connect the application server to the file system.

Amazon FSx for Windows File Server is a fully managed file storage service that supports the SMB protocol. It provides a native Windows file system experience and is designed to be accessed by SMB clients. This option meets the requirements for a fully managed shared storage solution accessible via SMB.

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250] A company’s security team requests that network traffic be captured in VPC Flow Logs. The logs will be frequently accessed for 90 days and then accessed intermittently.

What should a solutions architect do to meet these requirements when configuring the logs?

D. Use Amazon S3 as the target. Enable an S3 Lifecycle policy to transition the logs to S3 Standard-Infrequent Access (S3 Standard-IA) after 90 days.

Amazon S3 is a scalable and cost-effective object storage service. Enabling an S3 Lifecycle policy to transition logs to S3 Standard-Infrequent Access (S3 Standard-IA) after 90 days is a suitable solution. This approach allows you to store the logs in a cost-effective manner, automatically moving them to a lower-cost storage class after the initial 90 days.

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251] An Amazon EC2 instance is located in a private subnet in a new VPC. This subnet does not have outbound internet access, but the EC2 instance needs the ability to download monthly security updates from an outside vendor.

What should a solutions architect do to meet these requirements?

B. Create a NAT gateway, and place it in a public subnet. Configure the private subnet route table to use the NAT gateway as the default route.

NAT gateways are designed to provide outbound internet access for instances in private subnets. Placing a NAT gateway in a public subnet and configuring the private subnet's route table to use the NAT gateway as the default route allows the EC2 instance to download security updates while maintaining security.

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252] A solutions architect needs to design a system to store client case files. The files are core company assets and are important. The number of files will grow over time.

The files must be simultaneously accessible from multiple application servers that run on Amazon EC2 instances. The solution must have built-in redundancy.

Which solution meets these requirements?

A. Amazon Elastic File System (Amazon EFS)

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policy que.

C. Deleting Amazon EC2 instances.

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254] A company is reviewing a recent migration of a three-tier application to a VPC. The security team discovers that the principle of least privilege is not being applied to Amazon EC2 security group ingress and egress rules between the application tiers.

What should a solutions architect do to correct this issue?

B. Create security group rules using the security group ID as the source or destination.

Using security group IDs allows for dynamic and flexible configuration. Referencing security groups directly in rules ensures that instances associated with those security groups, regardless of their individual IDs, are included. This approach aligns with the principle of least privilege and simplifies rule management.

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255] A company has an ecommerce checkout workflow that writes an order to a database and calls a service to process the payment. Users are experiencing timeouts during the checkout process. When users resubmit the checkout form, multiple unique orders are created for the same desired transaction.

How should a solutions architect refactor this workflow to prevent the creation of multiple orders?

D. Store the order in the database. Send a message that includes the order number to an Amazon Simple Queue Service (Amazon SQS) FIFO queue. Set the payment service to retrieve the message and process the order. Delete the message from the queue.

Storing the order in the database first ensures that the order information is saved, even if the payment processing is delayed or fails.

Sending a message to an SQS FIFO queue with the order number ensures that the processing is idempotent. If the same order number is sent multiple times, SQS guarantees that the messages are processed in order and only once.

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256] A solutions architect is implementing a document review application using an Amazon S3 bucket for storage. The solution must prevent accidental deletion of the documents and ensure that all versions of the documents are available. Users must be able to download, modify, and upload documents.

Which combination of actions should be taken to meet these requirements? (Choose two.)

B. Enable versioning on the bucket.

D. Enable MFA Delete on the bucket.

B. allows multiple versions of objects in the S3 bucket to be stored. This ensures that all versions of the documents are available, even if they are accidentally overwritten or deleted.

D. adds an extra layer of protection against accidental deletion of objects in the bucket. With MFA Delete enabled, a user would need to provide an additional authentication factor to successfully delete objects from the bucket. This helps prevent accidental or unauthorized deletions and provides an extra level of security for critical documents.

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258] A company has an application that places hundreds of .csv files into an Amazon S3 bucket every hour. The files are 1 GB in size. Each time a file is uploaded, the company needs to convert the file to Apache Parquet format and place the output file into an S3 bucket.

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

D. Create an AWS Glue extract, transform, and load (ETL) job to convert the .csv files to Parquet format and place the output files into an S3 bucket. Create an AWS Lambda function for each S3 PUT event to invoke the ETL job.

AWS Glue ETL Job:

AWS Glue is a fully managed extract, transform, and load (ETL) service that can be used to convert data formats.

By creating an AWS Glue ETL job, you can offload the conversion process to a fully managed service, reducing operational overhead.

AWS Lambda for S3 PUT Events:

AWS Lambda can be configured to trigger on S3 PUT events. This ensures that the ETL job is invoked automatically each time a new .csv file is uploaded to the S3 bucket.

The Lambda function acts as a glue between the S3 events and the Glue ETL job.

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259] A company is implementing new data retention policies for all databases that run on Amazon RDS DB instances. The company must retain daily backups for a minimum period of 2 years. The backups must be consistent and restorable.

Which solution should a solutions architect recommend to meet these requirements?

A. Create a backup vault in AWS Backup to retain RDS backups. Create a new backup plan with a daily schedule and an expiration period of 2 years after creation. Assign the RDS DB instances to the backup plan.

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260] A company’s compliance team needs to move its file shares to AWS. The shares run on a Windows Server SMB file share. A self-managed on-premises Active Directory controls access to the files and folders.

The company wants to use Amazon FSx for Windows File Server as part of the solution. The company must ensure that the on-premises Active Directory groups restrict access to the FSx for Windows File Server SMB compliance shares, folders, and files after the move to AWS. The company has created an FSx for Windows File Server file system.

Which solution will meet these requirements?

D. Join the file system to the Active Directory to restrict access.

Join the File System to Active Directory:

By joining the FSx for Windows File Server file system to the on-premises Active Directory, you extend the trust relationship to AWS.

This ensures that access control is based on the on-premises Active Directory groups, allowing you to continue using the existing groups to restrict access to shares, folders, and files.

After joining the file system to Active Directory, you can manage access controls using the existing Active Directory groups.

Users and groups from the on-premises Active Directory can be granted appropriate permissions on the FSx file system.

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261] A company recently announced the deployment of its retail website to a global audience. The website runs on multiple Amazon EC2 instances behind an Elastic Load Balancer. The instances run in an Auto Scaling group across multiple Availability Zones.

The company wants to provide its customers with different versions of content based on the devices that the customers use to access the website.

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

A. Configure Amazon CloudFront to cache multiple versions of the content.

C. Configure a Lambda@Edge function to send specific objects to users based on the User-Agent header.

Amazon CloudFront is a content delivery network (CDN) service that can cache and deliver content globally.

Configure CloudFront to cache different versions of content based on the device type or other criteria.

Lambda@Edge allows you to run code in response to CloudFront events globally.

Use a Lambda@Edge function to inspect the User-Agent header and dynamically serve different versions of content based on the device type.

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262] A company plans to use Amazon ElastiCache for its multi-tier web application. A solutions architect creates a Cache VPC for the ElastiCache cluster and an App VPC for the application’s Amazon EC2 instances. Both VPCs are in the us-east-1 Region.

The solutions architect must implement a solution to provide the application’s EC2 instances with access to the ElastiCache cluster.

Which solution will meet these requirements MOST cost-effectively?

A. Create a peering connection between the VPCs. Add a route table entry for the peering connection in both VPCs. Configure an inbound rule for the ElastiCache cluster’s security group to allow inbound connection from the application’s security groups.

Creating a peering connection allows communication between the Cache VPC and the App VPC.

Adding a route table entry in both VPCs for the peering connection ensures that traffic can flow between them.

Inbound Rule in ElastiCache Security Group:

Configuring an inbound rule in the ElastiCache cluster's security group to allow connections from the application's security group enables the EC2 instances in the App VPC to access the ElastiCache cluster.

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263] A company is building an application that consists of several microservices. The company has decided to use container technologies to deploy its software on AWS. The company needs a solution that minimizes the amount of ongoing effort for maintenance and scaling. The company cannot manage additional infrastructure.

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

A. Deploy an Amazon Elastic Container Service (Amazon ECS) cluster.

D. Deploy an Amazon Elastic Container Service (Amazon ECS) service with a Fargate launch type. Specify a desired task number level of greater than or equal to 2.

An ECS cluster is necessary to organize and manage your Fargate tasks and services. It provides a logical grouping of tasks and services.

When using Fargate, you don't need to manage the underlying EC2 instances; the cluster helps manage the Fargate tasks.

Fargate is a serverless compute engine for containers that eliminates the need to manage underlying infrastructure.

With Fargate, you do not need to provision or manage EC2 instances; AWS takes care of the infrastructure, allowing you to focus solely on your containers.

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264] A company has a web application hosted over 10 Amazon EC2 instances with traffic directed by Amazon Route 53. The company occasionally experiences a timeout error when attempting to browse the application. The networking team finds that some DNS queries return IP addresses of unhealthy instances, resulting in the timeout error.

What should a solutions architect implement to overcome these timeout errors?

D. Create an Application Load Balancer (ALB) with a health check in front of the EC2 instances. Route to the ALB from Route 53.

By creating an ALB and configuring health checks, the architect ensures that only healthy instances receive traffic. The ALB periodically checks the health of the EC2 instances based on the configured health check settings.

Routing traffic to the ALB from Route 53 ensures that DNS queries return the IP address of the ALB instead of individual instances. This allows the ALB to distribute traffic only to healthy instances, avoiding timeouts caused by unhealthy instances.

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265] A solutions architect needs to design a highly available application consisting of web, application, and database tiers. HTTPS content delivery should be as close to the edge as possible, with the least delivery time.

Which solution meets these requirements and is MOST secure?

C. Configure a public Application Load Balancer (ALB) with multiple redundant Amazon EC2 instances in private subnets. Configure Amazon CloudFront to deliver HTTPS content using the public ALB as the origin.

Public ALB in Private Subnets:

Deploy a public Application Load Balancer (ALB) in private subnets. This ensures that the ALB is not directly accessible from the internet, providing an additional layer of security.

Deploy multiple redundant Amazon EC2 instances in private subnets behind the ALB. The instances host the application and database tiers.

Configure Amazon CloudFront to deliver HTTPS content using the public ALB as the origin. CloudFront provides content delivery close to the edge, reducing latency and improving the delivery time for end-users.

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266] A company has a popular gaming platform running on AWS. The application is sensitive to latency because latency can impact the user experience and introduce unfair advantages to some players. The application is deployed in every AWS Region. It runs on Amazon EC2 instances that are part of Auto Scaling groups configured behind Application Load Balancers (ALBs). A solutions architect needs to implement a mechanism to monitor the health of the application and redirect traffic to healthy endpoints.

Which solution meets these requirements?

A. Configure an accelerator in AWS Global Accelerator. Add a listener for the port that the application listens on, and attach it to a Regional endpoint in each Region. Add the ALB as the endpoint.

AWS Global Accelerator is designed to provide static IP addresses for global applications and direct traffic over the AWS global network to optimal AWS endpoints based on health, geography, and routing policies.

Configure an accelerator with a listener for the port that the application listens on.

Attach the listener to a Regional endpoint in each AWS Region where the application is deployed.

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267] A company has one million users that use its mobile app. The company must analyze the data usage in near-real time. The company also must encrypt the data in near-real time and must store the data in a centralized location in Apache Parquet format for further processing.

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

D. Create an Amazon Kinesis Data Firehose delivery stream to store the data in Amazon S3. Create an Amazon Kinesis Data Analytics application to analyze the data.

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268] A gaming company has a web application that displays scores. The application runs on Amazon EC2 instances behind an Application Load Balancer. The application stores data in an Amazon RDS for MySQL database. Users are starting to experience long delays and interruptions that are caused by database read performance. The company wants to improve the user experience while minimizing changes to the application’s architecture.

What should a solutions architect do to meet these requirements?

B. Use RDS Proxy between the application and the database.

RDS Proxy is a fully managed database proxy for Amazon RDS databases, including MySQL.

It helps improve scalability and availability for database connections, reducing the impact of database connection management on the application.

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269] An ecommerce company has noticed performance degradation of its Amazon RDS based web application. The performance degradation is attributed to an increase in the number of read-only SQL queries triggered by business analysts. A solutions architect needs to solve the problem with minimal changes to the existing web application.

What should the solutions architect recommend?

C. Create a read replica of the primary database and have the business analysts run their queries.

Creating a read replica is a common approach to offload read-only queries from the primary database, improving overall performance.

A read replica is an asynchronous copy of the primary database that allows for read-only operations.

Read replicas can be transparently used by the web application without requiring changes to the application logic.

Business analysts can direct their read-only queries to the read replica, reducing the load on the primary database.

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270] A company is using a centralized AWS account to store log data in various Amazon S3 buckets. A solutions architect needs to ensure that the data is encrypted at rest before the data is uploaded to the S3 buckets. The data also must be encrypted in transit.

Which solution meets these requirements?

A. Use client-side encryption to encrypt the data that is being uploaded to the S3 buckets.

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271] A solutions architect observes that a nightly batch processing job is automatically scaled up for 1 hour before the desired Amazon EC2 capacity is reached. The peak capacity is the ‘same every night and the batch jobs always start at 1 AM. The solutions architect needs to find a cost-effective solution that will allow for the desired EC2 capacity to be reached quickly and allow the Auto Scaling group to scale down after the batch jobs are complete.

What should the solutions architect do to meet these requirements?

C. Configure scheduled scaling to scale up to the desired compute level.

Scheduled scaling allows you to define specific times when your Auto Scaling group's desired capacity should be increased or decreased.

In this case, you can schedule the scaling action to increase the capacity just before the nightly batch processing job starts at 1 AM and then scale it down after the job completes.

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272] A company serves a dynamic website from a fleet of Amazon EC2 instances behind an Application Load Balancer (ALB). The website needs to support multiple languages to serve customers around the world. The website’s architecture is running in the us-west-1 Region and is exhibiting high request latency for users that are located in other parts of the world.

The website needs to serve requests quickly and efficiently regardless of a user’s location. However, the company does not want to recreate the existing architecture across multiple Regions.

What should a solutions architect do to meet these requirements?

B. Configure an Amazon CloudFront distribution with the ALB as the origin. Set the cache behavior settings to cache based on the Accept-Language request header.

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273] Question #273Topic 1

A rapidly growing ecommerce company is running its workloads in a single AWS Region. A solutions architect must create a disaster recovery (DR) strategy that includes a different AWS Region. The company wants its database to be up to date in the DR Region with the least possible latency. The remaining infrastructure in the DR Region needs to run at reduced capacity and must be able to scale up if necessary.

Which solution will meet these requirements with the LOWEST recovery time objective (RTO)?

B. Use an Amazon Aurora global database with a warm standby deployment.

Amazon Aurora supports a global database feature that allows you to create read replicas in multiple AWS Regions.

In a warm standby deployment, you can have a read replica in the DR Region that stays warm, meaning it is ready to take over in case of a failover.

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274] A company runs an application on Amazon EC2 instances. The company needs to implement a disaster recovery (DR) solution for the application. The DR solution needs to have a recovery time objective (RTO) of less than 4 hours. The DR solution also needs to use the fewest possible AWS resources during normal operations.

Which solution will meet these requirements in the MOST operationally efficient way?

B. Create Amazon Machine Images (AMIs) to back up the EC2 instances. Copy the AMIs to a secondary AWS Region. Automate infrastructure deployment in the secondary Region by using AWS CloudFormation.

By creating Amazon Machine Images (AMIs) to back up the EC2 instances and copying them to a secondary AWS Region, the company can ensure that they have a reliable backup in the event of a disaster. By using AWS CloudFormation to automate infrastructure deployment in the secondary Region, the company can minimize the amount of time and effort required to set up the DR solution.

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275] A company runs an internal browser-based application. The application runs on Amazon EC2 instances behind an Application Load Balancer. The instances run in an Amazon EC2 Auto Scaling group across multiple Availability Zones. The Auto Scaling group scales up to 20 instances during work hours, but scales down to 2 instances overnight. Staff are complaining that the application is very slow when the day begins, although it runs well by mid-morning.

How should the scaling be changed to address the staff complaints and keep costs to a minimum?

C. Implement a target tracking action triggered at a lower CPU threshold, and decrease the cooldown period.

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276] A company has a multi-tier application deployed on several Amazon EC2 instances in an Auto Scaling group. An Amazon RDS for Oracle instance is the application’ s data layer that uses Oracle-specific PL/SQL functions. Traffic to the application has been steadily increasing. This is causing the EC2 instances to become overloaded and the RDS instance to run out of storage. The Auto Scaling group does not have any scaling metrics and defines the minimum healthy instance count only. The company predicts that traffic will continue to increase at a steady but unpredictable rate before leveling off.

What should a solutions architect do to ensure the system can automatically scale for the increased traffic? (Choose two.)

A. Configure storage Auto Scaling on the RDS for Oracle instance.

This option allows the RDS instance to automatically scale its storage based on the actual storage usage, ensuring that you don't run out of storage.

D. Configure the Auto Scaling group to use the average CPU as the scaling metric.

By using CPU utilization as a scaling metric, the Auto Scaling group can dynamically adjust the number of EC2 instances based on the application's demand. This helps in handling increased traffic and preventing overload on existing instances.

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277] A company provides an online service for posting video content and transcoding it for use by any mobile platform. The application architecture uses Amazon Elastic File System (Amazon EFS) Standard to collect and store the videos so that multiple Amazon EC2 Linux instances can access the video content for processing. As the popularity of the service has grown over time, the storage costs have become too expensive.

Which storage solution is MOST cost-effective?

D. Use Amazon S3 for storing the video content. Move the files temporarily over to an Amazon Elastic Block Store (Amazon EBS) volume attached to the server for processing.

Amazon S3 is a highly durable, scalable, and cost-effective object storage service.

It is well-suited for storing large amounts of video content at a lower cost compared to Amazon EFS.

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278] A company wants to create an application to store employee data in a hierarchical structured relationship. The company needs a minimum-latency response to high-traffic queries for the employee data and must protect any sensitive data. The company also needs to receive monthly email messages if any financial information is present in the employee data.

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

B. Use Amazon DynamoDB to store the employee data in hierarchies. Export the data to Amazon S3 every month.

E. Configure Amazon Macie for the AWS account. Integrate Macie with Amazon EventBridge to send monthly notifications through an Amazon Simple Notification Service (Amazon SNS) subscription.

Amazon DynamoDB is a highly scalable, low-latency NoSQL database that can efficiently store hierarchical data.

Exporting the data to Amazon S3 every month allows further analysis and integration with other AWS services.

Amazon Macie is a security service that automatically discovers, classifies, and protects sensitive data.

Integrating Macie with EventBridge allows you to set up monthly events and send notifications through Amazon SNS if financial information is detected.

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279] A company has an application that is backed by an Amazon DynamoDB table. The company’s compliance requirements specify that database backups must be taken every month, must be available for 6 months, and must be retained for 7 years.

Which solution will meet these requirements?

A. Create an AWS Backup plan to back up the DynamoDB table on the first day of each month. Specify a lifecycle policy that transitions the backup to cold storage after 6 months. Set the retention period for each backup to 7 years.

AWS Backup will automatically take full backups of the DynamoDB table on the schedule defined in the backup plan (the first of each month).

The lifecycle policy can transition backups to cold storage after 6 months, meeting that requirement.

Setting a 7-year retention period in the backup plan will ensure each backup is retained for 7 years as required.

AWS Backup manages the backup jobs and lifecycle policies, requiring no custom scripting or management.

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280] A company is using Amazon CloudFront with its website. The company has enabled logging on the CloudFront distribution, and logs are saved in one of the company’s Amazon S3 buckets. The company needs to perform advanced analyses on the logs and build visualizations.

What should a solutions architect do to meet these requirements?

B. Use standard SQL queries in Amazon Athena to analyze the CloudFront logs in the S3 bucket. Visualize the results with Amazon QuickSight.

Amazon Athena allows you to run standard SQL queries directly on the CloudFront logs stored in the S3 bucket. This enables you to perform advanced analyses on the log data.

Once you have queried and processed the CloudFront log data using Athena, you can use Amazon QuickSight for data visualization and building visualizations.

Amazon QuickSight is a business intelligence (BI) tool that allows you to create interactive dashboards and visualizations from various data sources, including the results of Athena queries.

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281] A company runs a fleet of web servers using an Amazon RDS for PostgreSQL DB instance. After a routine compliance check, the company sets a standard that requires a recovery point objective (RPO) of less than 1 second for all its production databases.

Which solution meets these requirements?

A. Enable a Multi-AZ deployment for the DB instance.

A Multi-AZ (Availability Zone) deployment for Amazon RDS provides high availability and failover support for DB instances. In a Multi-AZ deployment, Amazon RDS automatically provisions and maintains a synchronous standby replica in a different Availability Zone.

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282] A company runs a web application that is deployed on Amazon EC2 instances in the private subnet of a VPC. An Application Load Balancer (ALB) that extends across the public subnets directs web traffic to the EC2 instances. The company wants to implement new security measures to restrict inbound traffic from the ALB to the EC2 instances while preventing access from any other source inside or outside the private subnet of the EC2 instances.

Which solution will meet these requirements?

B. Configure the security group for the EC2 instances to only allow traffic that comes from the security group for the ALB.

Security groups act as virtual firewalls for EC2 instances. By configuring the security group for the EC2 instances to only allow traffic from the security group associated with the ALB, you can control and restrict inbound traffic effectively.

When you specify a security group as the source in the inbound rules of another security group, you allow traffic only from instances that are members of that source security group. In this case, you can allow traffic only from the ALB, ensuring that traffic is restricted to the necessary source.

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284] As part of budget planning, management wants a report of AWS billed items listed by user. The data will be used to create department budgets. A solutions architect needs to determine the most efficient way to obtain this report information.

Which solution meets these requirements?

B. Create a report in Cost Explorer and download the report.

AWS Cost Explorer is a tool that allows you to visualize, understand, and manage your AWS costs and usage over time. It provides various pre-built reports and the ability to customize and filter reports based on different dimensions.

Option B, creating a report in Cost Explorer and downloading the report, is a suitable solution for obtaining detailed billed items listed by user. The report can be customized to include data relevant to user costs, and the downloadable report can be used for budget planning.

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285] A company hosts its static website by using Amazon S3. The company wants to add a contact form to its webpage. The contact form will have dynamic server-side components for users to input their name, email address, phone number, and user message. The company anticipates that there will be fewer than 100 site visits each month.

Which solution will meet these requirements MOST cost-effectively?

B. Create an Amazon API Gateway endpoint with an AWS Lambda backend that makes a call to Amazon Simple Email Service (Amazon SES).

Amazon API Gateway: Acts as the endpoint for the contact form. It enables you to create, publish, maintain, monitor, and secure APIs at any scale.

AWS Lambda: Serves as the backend for handling the dynamic components of the contact form. Lambda allows you to run code without provisioning or managing servers.

Amazon Simple Email Service (Amazon SES): Can be used to send emails, making it suitable for handling the form submissions.

This serverless architecture eliminates the need for managing and maintaining infrastructure, and costs are based on actual usage, making it cost-effective for low-traffic scenarios.

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286] A company has a static website that is hosted on Amazon CloudFront in front of Amazon S3. The static website uses a database backend. The company notices that the website does not reflect updates that have been made in the website’s Git repository. The company checks the continuous integration and continuous delivery (CI/CD) pipeline between the Git repository and Amazon S3. The company verifies that the webhooks are configured properly and that the CI/CD pipeline is sending messages that indicate successful deployments.

A solutions architect needs to implement a solution that displays the updates on the website.

Which solution will meet these requirements?

C. Invalidate the CloudFront cache.

When the website does not reflect updates that have been made in the Git repository, and the CI/CD pipeline is sending messages indicating successful deployments, it's likely that the issue is related to caching. Amazon CloudFront caches content to improve performance and reduce latency, and if the cache is not updated, it may serve stale content.

By invalidating the CloudFront cache, you ensure that the next request to CloudFront fetches the latest content from the origin (in this case, Amazon S3). This process forces CloudFront to re-fetch the content and update its cache.

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287] A company wants to migrate a Windows-based application from on premises to the AWS Cloud. The application has three tiers: an application tier, a business tier, and a database tier with Microsoft SQL Server. The company wants to use specific features of SQL Server such as native backups and Data Quality Services. The company also needs to share files for processing between the tiers.

How should a solutions architect design the architecture to meet these requirements?

B. Host all three tiers on Amazon EC2 instances. Use Amazon FSx for Windows File Server for file sharing between the tiers.

hosting all three tiers on Amazon EC2 instances allows you to have flexibility and control over the entire application architecture. To address the file-sharing requirement between the tiers, you can use Amazon FSx for Windows File Server.

Amazon FSx for Windows File Server is a fully managed Windows file system that is accessible from Windows-based instances over the Server Message Block (SMB) protocol. It supports the specific features of Windows File Server, including features like native backups and access to Windows-specific services.

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288] A company is migrating a Linux-based web server group to AWS. The web servers must access files in a shared file store for some content. The company must not make any changes to the application.

What should a solutions architect do to meet these requirements?

C. Create an Amazon Elastic File System (Amazon EFS) file system. Mount the EFS file system on all web servers.

To meet the requirement of providing a shared file store for Linux-based web servers without making changes to the application, you can use Amazon Elastic File System (Amazon EFS). Amazon EFS is a scalable and fully managed file storage service that can be easily mounted on multiple EC2 instances.

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289] A company has an AWS Lambda function that needs read access to an Amazon S3 bucket that is located in the same AWS account.

Which solution will meet these requirements in the MOST secure manner?

B. Apply an IAM role to the Lambda function. Apply an IAM policy to the role to grant read access to the S3 bucket.

An IAM role provides temporary credentials to the Lambda function to access AWS resources. The function does not have persistent credentials.

The IAM policy grants least privilege access by specifying read access only to the specific S3 bucket needed. Access is not granted to all S3 buckets.

If the Lambda function is compromised, the attacker would only gain access to the one specified S3 bucket. They would not receive broad access to resources.

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290] A company hosts a web application on multiple Amazon EC2 instances. The EC2 instances are in an Auto Scaling group that scales in response to user demand. The company wants to optimize cost savings without making a long-term commitment.

Which EC2 instance purchasing option should a solutions architect recommend to meet these requirements?

C. A mix of On-Demand Instances and Spot Instances

On-Demand Instances: These instances are charged per hour or per second of usage, without any upfront payment or long-term commitment. While they offer flexibility, they are usually more expensive compared to other purchasing options.

Spot Instances: These are spare compute capacity in the AWS cloud available at a lower price compared to On-Demand Instances. However, they can be terminated by AWS with little notice if the capacity is needed elsewhere. Spot Instances are suitable for workloads that are fault-tolerant and can handle interruptions.

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291] A media company uses Amazon CloudFront for its publicly available streaming video content. The company wants to secure the video content that is hosted in Amazon S3 by controlling who has access. Some of the company’s users are using a custom HTTP client that does not support cookies. Some of the company’s users are unable to change the hardcoded URLs that they are using for access.

Which services or methods will meet these requirements with the LEAST impact to the users? (Choose two.)

A. Signed cookies

B. Signed URLs

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292] A company is preparing a new data platform that will ingest real-time streaming data from multiple sources. The company needs to transform the data before writing the data to Amazon S3. The company needs the ability to use SQL to query the transformed data.

Which solutions will meet these requirements? (Choose two.)

A. Use Amazon Kinesis Data Streams to stream the data. Use Amazon Kinesis Data Analytics to transform the data. Use Amazon Kinesis Data Firehose to write the data to Amazon S3. Use Amazon Athena to query the transformed data from Amazon S3.

B. Use Amazon Managed Streaming for Apache Kafka (Amazon MSK) to stream the data. Use AWS Glue to transform the data and to write the data to Amazon S3. Use Amazon Athena to query the transformed data from Amazon S3.

Use Amazon Kinesis Data Streams to stream the data.

Use Amazon Kinesis Data Analytics to transform the data.

Use Amazon Kinesis Data Firehose to write the data to Amazon S3.

Use Amazon Athena to query the transformed data from Amazon S3.

This option uses the Kinesis suite for streaming, analytics, and Firehose for writing to S3, with Athena for querying.

Use Amazon Managed Streaming for Apache Kafka (Amazon MSK) to stream the data.

Use AWS Glue to transform the data and write the data to Amazon S3.

Use Amazon Athena to query the transformed data from Amazon S3.

This option leverages Amazon MSK for streaming, AWS Glue for transformation, and Athena for querying, providing a comprehensive solution.

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293] A company has an on-premises volume backup solution that has reached its end of life. The company wants to use AWS as part of a new backup solution and wants to maintain local access to all the data while it is backed up on AWS. The company wants to ensure that the data backed up on AWS is automatically and securely transferred.

Which solution meets these requirements?

D. Use AWS Storage Gateway and configure a stored volume gateway. Run the Storage Gateway software appliance on premises and map the gateway storage volumes to on-premises storage. Mount the gateway storage volumes to provide local access to the data.

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294] An application that is hosted on Amazon EC2 instances needs to access an Amazon S3 bucket. Traffic must not traverse the internet.

How should a solutions architect configure access to meet these requirements?

B. Set up a gateway VPC endpoint for Amazon S3 in the VPC.

A VPC endpoint for Amazon S3 allows you to connect your VPC directly to S3 without traversing the internet. This ensures that traffic between your EC2 instances and the S3 bucket stays within the AWS network.

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295] An ecommerce company stores terabytes of customer data in the AWS Cloud. The data contains personally identifiable information (PII). The company wants to use the data in three applications. Only one of the applications needs to process the PII. The PII must be removed before the other two applications process the data.

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

B. Store the data in an Amazon S3 bucket. Process and transform the data by using S3 Object Lambda before returning the data to the requesting application.

S3 Object Lambda allows you to add custom code to process and transform data as it is requested by applications, without having to modify the original data stored in S3.

By using S3 Object Lambda, you can process and remove the personally identifiable information (PII) on-the-fly before returning the data to the applications.

This approach minimizes operational overhead because you don't need to create separate storage (buckets or tables) for each application, and you can apply the PII removal logic dynamically as the data is requested.

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296] A development team has launched a new application that is hosted on Amazon EC2 instances inside a development VPC. A solutions architect needs to create a new VPC in the same account. The new VPC will be peered with the development VPC. The VPC CIDR block for the development VPC is 192.168.0.0/24. The solutions architect needs to create a CIDR block for the new VPC. The CIDR block must be valid for a VPC peering connection to the development VPC.

What is the SMALLEST CIDR block that meets these requirements?

D. 10.0.1.0/24

This is a valid CIDR block that does not overlap with the existing development VPC (192.168.0.0/24).

Therefore, this is the SMALLEST CIDR block that meets the requirements.

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297] A solutions architect needs to implement a solution to automate the scalability of the application. The solution must optimize the cost of the architecture and must ensure that the application has enough CPU resources when surges occur.

Which solution will meet these requirements?

B. Create an EC2 Auto Scaling group. Select the existing ALB as the load balancer and the existing target group as the target group. Set a target tracking scaling policy that is based on the ASGAverageCPUUtilization metric. Set the minimum instances to 2, the desired capacity to 3, the maximum instances to 6, and the target value to 50%. Add the EC2 instances to the Auto Scaling group.

Option B utilizes EC2 Auto Scaling, which automatically adjusts the number of EC2 instances in the Auto Scaling group based on the specified target tracking scaling policy.

By setting a target tracking scaling policy based on the ASGAverageCPUUtilization metric with a target value of 50%, the Auto Scaling group will dynamically adjust the number of instances to maintain an average CPU utilization close to the target value.

This solution provides scalability when needed, ensures that there are enough CPU resources during surges, and optimizes costs by automatically adjusting the capacity based on demand.

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298] A company is running a critical business application on Amazon EC2 instances behind an Application Load Balancer. The EC2 instances run in an Auto Scaling group and access an Amazon RDS DB instance.

The design did not pass an operational review because the EC2 instances and the DB instance are all located in a single Availability Zone. A solutions architect must update the design to use a second Availability Zone.

Which solution will make the application highly available?

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299] A research laboratory needs to process approximately 8 TB of data. The laboratory requires sub-millisecond latencies and a minimum throughput of 6 GBps for the storage subsystem. Hundreds of Amazon EC2 instances that run Amazon Linux will distribute and process the data.

Which solution will meet the performance requirements?

B. Create an Amazon S3 bucket to store the raw data. Create an Amazon FSx for Lustre file system that uses persistent SSD storage. Select the option to import data from and export data to Amazon S3. Mount the file system on the EC2 instances.

Amazon FSx for Lustre is a high-performance file system designed for use with compute-intensive workloads. It provides sub-millisecond latencies and is well-suited for scenarios where high throughput is required.

Using persistent SSD storage for the Amazon FSx for Lustre file system ensures that it meets the minimum throughput requirement of 6 GBps.

Storing the raw data in an Amazon S3 bucket allows for scalable and durable storage, and the integration with FSx for Lustre allows seamless importing and exporting of data to and from S3.

This solution is designed to provide the required performance characteristics for processing large amounts of data with hundreds of EC2 instances.

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300] A company needs to migrate a legacy application from an on-premises data center to the AWS Cloud because of hardware capacity constraints. The application runs 24 hours a day, 7 days a week. The application’s database storage continues to grow over time.

What should a solutions architect do to meet these requirements MOST cost-effectively?

C. Migrate the application layer to Amazon EC2 Reserved Instances. Migrate the data storage layer to Amazon Aurora Reserved Instances.

Using Amazon EC2 Reserved Instances for the application layer provides cost savings compared to On-Demand Instances while ensuring availability for the 24/7 runtime.

Migrating the data storage layer to Amazon Aurora Reserved Instances provides a fully managed relational database service with automatic scaling capabilities. Amazon Aurora is designed for high performance and cost efficiency.

Reserved Instances provide cost savings compared to On-Demand Instances over an extended period, making them suitable for applications with continuous operation.

Amazon Aurora, being a fully managed service, offloads much of the operational overhead associated with managing a traditional database, making it a cost-effective choice for growing database storage.

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301] Question #301Topic 1

A university research laboratory needs to migrate 30 TB of data from an on-premises Windows file server to Amazon FSx for Windows File Server. The laboratory has a 1 Gbps network link that many other departments in the university share.

The laboratory wants to implement a data migration service that will maximize the performance of the data transfer. However, the laboratory needs to be able to control the amount of bandwidth that the service uses to minimize the impact on other departments. The data migration must take place within the next 5 days.

Which AWS solution will meet these requirements?

C. AWS DataSync

AWS DataSync is a fully managed data transfer service that can be used to simplify, automate, and accelerate copying large amounts of data between on-premises storage systems and Amazon S3, Amazon EFS, or Amazon FSx for Windows File Server.

With AWS DataSync, you can control the bandwidth to minimize the impact on other departments by configuring the maximum bandwidth that the data transfer service is allowed to use.

AWS DataSync is designed for high-speed data transfers, and it can take advantage of the available network bandwidth to maximize performance.

AWS DataSync can be quickly set up and configured for the migration, allowing the laboratory to meet the 5-day migration timeline.

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302] A company wants to create a mobile app that allows users to stream slow-motion video clips on their mobile devices. Currently, the app captures video clips and uploads the video clips in raw format into an Amazon S3 bucket. The app retrieves these video clips directly from the S3 bucket. However, the videos are large in their raw format.

Users are experiencing issues with buffering and playback on mobile devices. The company wants to implement solutions to maximize the performance and scalability of the app while minimizing operational overhead.

Which combination of solutions will meet these requirements? (Choose two.)

A. Deploy Amazon CloudFront for content delivery and caching.

C. Use Amazon Elastic Transcoder to convert the video files to more appropriate formats.

Amazon CloudFront is a content delivery network (CDN) that can distribute your video content globally, reducing latency and improving the speed of delivery.

CloudFront can cache the video content at edge locations, which helps in minimizing the load on the S3 bucket and improves playback performance for users.

Amazon Elastic Transcoder can convert the raw video files into more appropriate formats suitable for streaming, reducing the size of the videos.

By using Elastic Transcoder, you can create different versions of the video files optimized for different devices, bitrates, and resolutions, which can significantly improve the playback experience on mobile devices

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303] A company is launching a new application deployed on an Amazon Elastic Container Service (Amazon ECS) cluster and is using the Fargate launch type for ECS tasks. The company is monitoring CPU and memory usage because it is expecting high traffic to the application upon its launch. However, the company wants to reduce costs when utilization decreases.

What should a solutions architect recommend?

D. Use AWS Application Auto Scaling with target tracking policies to scale when ECS metric breaches trigger an Amazon CloudWatch alarm.

AWS Application Auto Scaling is a service that can automatically adjust the number of running ECS tasks or services based on specified CloudWatch metrics.

Target tracking policies allow you to set a target value for a specific metric, and AWS Application Auto Scaling automatically adjusts the desired task count to maintain the target.

By using target tracking policies, you can ensure that the ECS cluster scales up or down based on the application's demand while maintaining a balance between cost efficiency and performance.

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304] A company recently created a disaster recovery site in a different AWS Region. The company needs to transfer large amounts of data back and forth between NFS file systems in the two Regions on a periodic basis.

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

A. Use AWS DataSync.

If we want to transfer large amount of data we can used AWS Datasync.

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305] A company is designing a shared storage solution for a gaming application that is hosted in the AWS Cloud. The company needs the ability to use SMB clients to access data. The solution must be fully managed.

Which AWS solution meets these requirements?

C. Create an Amazon FSx for Windows File Server file system. Attach the file system to the origin server. Connect the application server to the file system.

Amazon FSx for Windows File Server is a fully managed file storage service that is compatible with the Server Message Block (SMB) protocol, making it suitable for use with SMB clients, including Windows-based systems.

With Amazon FSx for Windows File Server, you can create a file system that can be mounted on application servers, providing shared storage for the gaming application.

Amazon FSx for Windows File Server handles the management aspects such as server provisioning, maintenance, and backups, making it a fully managed solution.

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306] A company wants to run an in-memory database for a latency-sensitive application that runs on Amazon EC2 instances. The application processes more than 100,000 transactions each minute and requires high network throughput. A solutions architect needs to provide a cost-effective network design that minimizes data transfer charges.

Which solution meets these requirements?

A. Launch all EC2 instances in the same Availability Zone within the same AWS Region. Specify a placement group with cluster strategy when launching EC2 instances.

A placement group is a logical grouping of instances within a single Availability Zone. The "cluster" strategy for placement groups places instances in close proximity to each other, providing low-latency, high-throughput communication between instances.

By launching all EC2 instances in the same Availability Zone within the same AWS Region, you minimize data transfer charges because data transfer within the same Availability Zone is not subject to additional costs.

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307] A company that primarily runs its application servers on premises has decided to migrate to AWS. The company wants to minimize its need to scale its Internet Small Computer Systems Interface (iSCSI) storage on premises. The company wants only its recently accessed data to remain stored locally.

Which AWS solution should the company use to meet these requirements?

D. AWS Storage Gateway Volume Gateway cached volumes.

AWS Storage Gateway provides a hybrid cloud storage service that enables on-premises applications to use cloud storage seamlessly.

Volume Gateway offers two modes: cached volumes and stored volumes.

In the cached volumes mode, the entire dataset is stored in Amazon S3, and the most frequently accessed data is cached on-premises. This allows the company to keep recently accessed data locally, minimizing the need for on-premises scaling.

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308] A company has multiple AWS accounts that use consolidated billing. The company runs several active high performance Amazon RDS for Oracle On-Demand DB instances for 90 days. The company’s finance team has access to AWS Trusted Advisor in the consolidated billing account and all other AWS accounts.

The finance team needs to use the appropriate AWS account to access the Trusted Advisor check recommendations for RDS. The finance team must review the appropriate Trusted Advisor check to reduce RDS costs.

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

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309] A solutions architect needs to optimize storage costs. The solutions architect must identify any Amazon S3 buckets that are no longer being accessed or are rarely accessed.

Which solution will accomplish this goal with the LEAST operational overhead?

A. Analyze bucket access patterns by using the S3 Storage Lens dashboard for advanced activity metrics.

S3 Storage Lens is a feature of Amazon S3 that provides a detailed set of reports and metrics to help you understand, analyze, and optimize your storage usage.

The S3 Storage Lens dashboard provides advanced activity metrics, including insights into access patterns, data transfer, and other storage-related activities.

By using the S3 Storage Lens dashboard, you can easily identify buckets that are no longer being accessed or are rarely accessed without the need for additional setup or operational overhead.

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310] A company sells datasets to customers who do research in artificial intelligence and machine learning (AI/ML). The datasets are large, formatted files that are stored in an Amazon S3 bucket in the us-east-1 Region. The company hosts a web application that the customers use to purchase access to a given dataset. The web application is deployed on multiple Amazon EC2 instances behind an Application Load Balancer. After a purchase is made, customers receive an S3 signed URL that allows access to the files.

The customers are distributed across North America and Europe. The company wants to reduce the cost that is associated with data transfers and wants to maintain or improve performance.

What should a solutions architect do to meet these requirements?

B. Deploy an Amazon CloudFront distribution with the existing S3 bucket as the origin. Direct customer requests to the CloudFront URL. Switch to CloudFront signed URLs for access control.

Amazon CloudFront: CloudFront is a content delivery network (CDN) service that distributes content globally with low latency and high data transfer speeds. It helps reduce data transfer costs and improves performance by caching content at edge locations.

S3 Bucket as the Origin: By configuring the existing S3 bucket as the origin for CloudFront, you allow CloudFront to cache and serve the datasets from edge locations around the world.

CloudFront Signed URLs: CloudFront provides the ability to generate signed URLs, allowing you to control access to your content. You can use CloudFront signed URLs for access control, providing a secure way for customers to access datasets.

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311] A company is using AWS to design a web application that will process insurance quotes. Users will request quotes from the application. Quotes must be separated by quote type, must be responded to within 24 hours, and must not get lost. The solution must maximize operational efficiency and must minimize maintenance.

Which solution meets these requirements?

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312] A company has an application that runs on several Amazon EC2 instances. Each EC2 instance has multiple Amazon Elastic Block Store (Amazon EBS) data volumes attached to it. The application’s EC2 instance configuration and data need to be backed up nightly. The application also needs to be recoverable in a different AWS Region.

Which solution will meet these requirements in the MOST operationally efficient way?

C. Create a backup plan by using AWS Backup to perform nightly backups. Copy the backups to another Region. Add the application’s EBS volumes as resources.

AWS Backup: AWS Backup is a fully managed backup service that centralizes and automates the backup of data across AWS services. It provides a simple and efficient way to back up your EC2 instances and their associated EBS volumes.

Backup Plan: With AWS Backup, you can create backup plans to define when and how your backups are performed. Backup plans allow you to schedule nightly backups and define retention policies.

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313] A company is building a mobile app on AWS. The company wants to expand its reach to millions of users. The company needs to build a platform so that authorized users can watch the company’s content on their mobile devices.

What should a solutions architect recommend to meet these requirements?

C. Use Amazon CloudFront. Provide signed URLs to stream content.

Amazon CloudFront: CloudFront is a content delivery network (CDN) service provided by AWS. It accelerates the delivery of content by caching it at edge locations globally, reducing latency for end-users.

Signed URLs: CloudFront supports the generation of signed URLs, which can be used to control access to content. You can create time-limited URLs with specific permissions, allowing only authorized users to access the content.

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314] A company has an on-premises MySQL database used by the global sales team with infrequent access patterns. The sales team requires the database to have minimal downtime. A database administrator wants to migrate this database to AWS without selecting a particular instance type in anticipation of more users in the future.

Which service should a solutions architect recommend?

B. Amazon Aurora Serverless for MySQL

Amazon Aurora Serverless: Aurora Serverless is a fully managed, on-demand, and auto-scaling relational database engine provided by AWS. It is suitable for infrequent access patterns and allows the database to automatically start up, shut down, and scale capacity based on actual usage.

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215] A company experienced a breach that affected several applications in its on-premises data center. The attacker took advantage of vulnerabilities in the custom applications that were running on the servers. The company is now migrating its applications to run on Amazon EC2 instances. The company wants to implement a solution that actively scans for vulnerabilities on the EC2 instances and sends a report that details the findings.

Which solution will meet these requirements?

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316] A company uses an Amazon EC2 instance to run a script to poll for and process messages in an Amazon Simple Queue Service (Amazon SQS) queue. The company wants to reduce operational costs while maintaining its ability to process a growing number of messages that are added to the queue.

What should a solutions architect recommend to meet these requirements?

C. Migrate the script on the EC2 instance to an AWS Lambda function with the appropriate runtime.

AWS Lambda: Lambda is a serverless computing service that allows you to run code without provisioning or managing servers. It automatically scales based on the number of incoming requests.

Cost-Efficiency: With Lambda, you only pay for the compute time consumed during code execution. This can be more cost-effective than running and maintaining an EC2 instance, especially for sporadic or event-driven workloads.

Automatic Scaling: Lambda automatically scales based on the number of incoming events. As the number of messages in the SQS queue grows, Lambda can scale out to handle the increased workload.

Event-Driven: Lambda is well-suited for event-driven architectures, making it a good fit for scenarios where messages are added to an SQS queue.

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317] A company uses a legacy application to produce data in CSV format. The legacy application stores the output data in Amazon S3. The company is deploying a new commercial off-the-shelf (COTS) application that can perform complex SQL queries to analyze data that is stored in Amazon Redshift and Amazon S3 only. However, the COTS application cannot process the .csv files that the legacy application produces.

The company cannot update the legacy application to produce data in another format. The company needs to implement a solution so that the COTS application can use the data that the legacy application produces.

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

A. Create an AWS Glue extract, transform, and load (ETL) job that runs on a schedule. Configure the ETL job to process the .csv files and store the processed data in Amazon Redshift.

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318] A company recently migrated its entire IT environment to the AWS Cloud. The company discovers that users are provisioning oversized Amazon EC2 instances and modifying security group rules without using the appropriate change control process. A solutions architect must devise a strategy to track and audit these inventory and configuration changes.

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

A. Enable AWS CloudTrail and use it for auditing.

D. Enable AWS Config and create rules for auditing and compliance purposes.

A. Enable AWS CloudTrail and use it for auditing. CloudTrail provides event history of your AWS account activity, including actions taken through the AWS Management Console, AWS Command Line Interface (CLI), and AWS SDKs and APIs. By enabling CloudTrail, the company can track user activity and changes to AWS resources, and monitor compliance with internal policies and external regulations.

D. Enable AWS Config and create rules for auditing and compliance purposes. AWS Config provides a detailed inventory of the AWS resources in your account, and continuously records changes to the configurations of those resources. By creating rules in AWS Config, the company can automate the evaluation of resource configurations against desired state, and receive alerts when configurations drift from compliance.

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319] A company has hundreds of Amazon EC2 Linux-based instances in the AWS Cloud. Systems administrators have used shared SSH keys to manage the instances. After a recent audit, the company’s security team is mandating the removal of all shared keys. A solutions architect must design a solution that provides secure access to the EC2 instances.

Which solution will meet this requirement with the LEAST amount of administrative overhead?

A. Use AWS Systems Manager Session Manager to connect to the EC2 instances.

AWS Systems Manager Session Manager: AWS Systems Manager provides a service called Session Manager that allows you to securely connect to your EC2 instances without the need for an external bastion host or direct access to the instances. Session Manager uses IAM roles for authentication and provides an auditable and controlled way to access instances.

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320] A company is using a fleet of Amazon EC2 instances to ingest data from on-premises data sources. The data is in JSON format and ingestion rates can be as high as 1 MB/s. When an EC2 instance is rebooted, the data in-flight is lost. The company’s data science team wants to query ingested data in near-real time.

Which solution provides near-real-time data querying that is scalable with minimal data loss?

A. Publish data to Amazon Kinesis Data Streams, Use Kinesis Data Analytics to query the data.

Amazon Kinesis Data Streams: It is a scalable and durable real-time data streaming service. It allows you to ingest, buffer, and process streaming data in real time. In this scenario, you can publish data to a Kinesis Data Stream from your EC2 instances.

Kinesis Data Analytics: It provides an SQL-like language for querying and analyzing data in real time. You can use Kinesis Data Analytics to process and analyze the ingested data directly within the Kinesis pipeline.

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321] What should a solutions architect do to ensure that all objects uploaded to an Amazon S3 bucket are encrypted?

D. Update the bucket policy to deny if the PutObject does not have an x-amz-server-side-encryption header set.

x-amz-server-side-encryption header: This header specifies the server-side encryption algorithm to be used for the object. If an object is uploaded without the x-amz-server-side-encryption header or with an incorrect value, it can be denied.

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322] A solutions architect is designing a multi-tier application for a company. The application's users upload images from a mobile device. The application generates a thumbnail of each image and returns a message to the user to confirm that the image was uploaded successfully.

The thumbnail generation can take up to 60 seconds, but the company wants to provide a faster response time to its users to notify them that the original image was received. The solutions architect must design the application to asynchronously dispatch requests to the different application tiers.

What should the solutions architect do to meet these requirements?

C. Create an Amazon Simple Queue Service (Amazon SQS) message queue. As images are uploaded, place a message on the SQS queue for thumbnail generation. Alert the user through an application message that the image was received.

Amazon SQS (Simple Queue Service): SQS is a fully managed message queuing service that enables decoupling of the components of a cloud application. By creating an SQS message queue, the image upload process can place messages in the queue for thumbnail generation.

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323] A company’s facility has badge readers at every entrance throughout the building. When badges are scanned, the readers send a message over HTTPS to indicate who attempted to access that particular entrance.

A solutions architect must design a system to process these messages from the sensors. The solution must be highly available, and the results must be made available for the company’s security team to analyze.

Which system architecture should the solutions architect recommend?

B. Create an HTTPS endpoint in Amazon API Gateway. Configure the API Gateway endpoint to invoke an AWS Lambda function to process the messages and save the results to an Amazon DynamoDB table.

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324] A company wants to implement a disaster recovery plan for its primary on-premises file storage volume. The file storage volume is mounted from an Internet Small Computer Systems Interface (iSCSI) device on a local storage server. The file storage volume holds hundreds of terabytes (TB) of data.

The company wants to ensure that end users retain immediate access to all file types from the on-premises systems without experiencing latency.

Which solution will meet these requirements with the LEAST amount of change to the company's existing infrastructure?

C. Provision an AWS Storage Gateway Volume Gateway cached volume. Set the local cache to 10 TB. Mount the Volume Gateway cached volume to the existing file server by using iSCSI, and copy all files to the storage volume. Configure scheduled snapshots of the storage volume. To recover from a disaster, restore a snapshot to an Amazon Elastic Block Store (Amazon EBS) volume and attach the EBS volume to an Amazon EC2 instance.

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325] A company is hosting a web application from an Amazon S3 bucket. The application uses Amazon Cognito as an identity provider to authenticate users and return a JSON Web Token (JWT) that provides access to protected resources that are stored in another S3 bucket.

Upon deployment of the application, users report errors and are unable to access the protected content. A solutions architect must resolve this issue by providing proper permissions so that users can access the protected content.

Which solution meets these requirements?

A. Update the Amazon Cognito identity pool to assume the proper IAM role for access to the protected content.

Amazon Cognito Identity Pool: When users authenticate through Amazon Cognito, they assume roles that determine their access to AWS resources. By updating the Cognito identity pool, you can configure it to assume the proper IAM role that has the necessary permissions to access the protected content stored in the S3 bucket.

IAM Role Permissions: The IAM role associated with the identity pool should have the required permissions (e.g., S3 getObject permissions) to access the protected content in the S3 bucket.

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326] An image hosting company uploads its large assets to Amazon S3 Standard buckets. The company uses multipart upload in parallel by using S3 APIs and overwrites if the same object is uploaded again. For the first 30 days after upload, the objects will be accessed frequently. The objects will be used less frequently after 30 days, but the access patterns for each object will be inconsistent. The company must optimize its S3 storage costs while maintaining high availability and resiliency of stored assets.

Which combination of actions should a solutions architect recommend to meet these requirements? (Choose two.)

A. Move assets to S3 Intelligent-Tiering after 30 days.

B. Configure an S3 Lifecycle policy to clean up incomplete multipart uploads.

Move assets to S3 Intelligent-Tiering after 30 days: This option is suitable for objects with unknown or changing access patterns. S3 Intelligent-Tiering automatically moves objects between two access tiers (frequent and infrequent access) based on changing access patterns. It helps optimize costs by automatically selecting the most cost-effective tier for each object.

Configure an S3 Lifecycle policy to clean up incomplete multipart uploads: This is a good practice to clean up any incomplete multipart uploads, which can consume additional storage space without contributing to the actual objects. Cleaning up incomplete uploads helps manage storage costs efficiently.

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327] A solutions architect must secure a VPC network that hosts Amazon EC2 instances. The EC2 instances contain highly sensitive data and run in a private subnet. According to company policy, the EC2 instances that run in the VPC can access only approved third-party software repositories on the internet for software product updates that use the third party’s URL. Other internet traffic must be blocked.

Which solution meets these requirements?

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328] A company is hosting a three-tier ecommerce application in the AWS Cloud. The company hosts the website on Amazon S3 and integrates the website with an API that handles sales requests. The company hosts the API on three Amazon EC2 instances behind an Application Load Balancer (ALB). The API consists of static and dynamic front-end content along with backend workers that process sales requests asynchronously.

The company is expecting a significant and sudden increase in the number of sales requests during events for the launch of new products.

What should a solutions architect recommend to ensure that all the requests are processed successfully?

B. Add an Amazon CloudFront distribution for the static content. Place the EC2 instances in an Auto Scaling group to launch new instances based on network traffic.

Amazon CloudFront for Static Content: By using CloudFront, you can distribute static content (like images, stylesheets) globally, reducing latency for end-users and offloading some of the traffic from your backend instances.

Auto Scaling Group: An Auto Scaling group allows you to automatically adjust the number of EC2 instances to handle changes in demand. By placing the EC2 instances in an Auto Scaling group, you can dynamically scale the number of instances based on network traffic, ensuring that the application can handle increased load during events.

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329] A security audit reveals that Amazon EC2 instances are not being patched regularly. A solutions architect needs to provide a solution that will run regular security scans across a large fleet of EC2 instances. The solution should also patch the EC2 instances on a regular schedule and provide a report of each instance’s patch status.

Which solution will meet these requirements?

D. Turn on Amazon Inspector in the account. Configure Amazon Inspector to scan the EC2 instances for software vulnerabilities. Set up AWS Systems Manager Patch Manager to patch the EC2 instances on a regular schedule.

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330] A company is planning to store data on Amazon RDS DB instances. The company must encrypt the data at rest.

What should a solutions architect do to meet this requirement?

A. Create a key in AWS Key Management Service (AWS KMS). Enable encryption for the DB instances.

By creating a key in AWS KMS and enabling encryption for the RDS DB instances, you ensure that the data at rest is encrypted using the specified key.

AWS RDS supports encryption at rest, and you can use AWS KMS to manage the encryption keys. When you enable encryption for an RDS DB instance, you can specify a KMS key to use for encryption.

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331] A company must migrate 20 TB of data from a data center to the AWS Cloud within 30 days. The company’s network bandwidth is limited to 15 Mbps and cannot exceed 70% utilization.

What should a solutions architect do to meet these requirements?

A. Use AWS Snowball.

AWS Snowball is a physical data transport solution that helps customers transfer large amounts of data into and out of AWS. It addresses challenges associated with large-scale data transfers, particularly when network constraints, transfer times, or security concerns make online data transfer less practical.

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332] A company needs to provide its employees with secure access to confidential and sensitive files. The company wants to ensure that the files can be accessed only by authorized users. The files must be downloaded securely to the employees’ devices.

The files are stored in an on-premises Windows file server. However, due to an increase in remote usage, the file server is running out of capacity.

Which solution will meet these requirements?

B. Migrate the files to an Amazon FSx for Windows File Server file system. Integrate the Amazon FSx file system with the on-premises Active Directory. Configure AWS Client VPN.

Amazon FSx for Windows File Server: It is a fully managed file storage service built on Windows Server. It is designed to be integrated with on-premises Active Directory, allowing for a seamless extension of your existing directory and authentication infrastructure to the AWS Cloud.

Integrate with On-Premises Active Directory: With Amazon FSx, you can integrate the file system with your on-premises Active Directory, ensuring that the same user accounts and permissions are used both on-premises and in the cloud.

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333] A company’s application runs on Amazon EC2 instances behind an Application Load Balancer (ALB). The instances run in an Amazon EC2 Auto Scaling group across multiple Availability Zones. On the first day of every month at midnight, the application becomes much slower when the month-end financial calculation batch runs. This causes the CPU utilization of the EC2 instances to immediately peak to 100%, which disrupts the application.

What should a solutions architect recommend to ensure the application is able to handle the workload and avoid downtime?

C. Configure an EC2 Auto Scaling scheduled scaling policy based on the monthly schedule.

By configuring a scheduled scaling policy, the EC2 Auto Scaling group can proactively launch additional EC2 instances before the CPU utilization peaks to 100%. This will ensure that the application can handle the workload during the month-end financial calculation batch, and avoid any disruption or downtime.

Configuring a simple scaling policy based on CPU utilization or adding Amazon CloudFront distribution or Amazon ElastiCache will not directly address the issue of handling the monthly peak workload.

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334] A company wants to give a customer the ability to use on-premises Microsoft Active Directory to download files that are stored in Amazon S3. The customer’s application uses an SFTP client to download the files.

Which solution will meet these requirements with the LEAST operational overhead and no changes to the customer’s application?

A. Set up AWS Transfer Family with SFTP for Amazon S3. Configure integrated Active Directory authentication.

AWS Transfer Family with SFTP for Amazon S3: AWS Transfer Family is a fully managed service that allows you to set up an SFTP (Secure File Transfer Protocol) service for Amazon S3. It enables you to transfer files directly to and from Amazon S3 using the SFTP protocol.

Integrated Active Directory Authentication: AWS Transfer Family allows you to configure authentication with Microsoft Active Directory. By integrating with Active Directory, you can provide users with seamless access to S3 resources using their existing credentials without modifying their applications.

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335] A company is experiencing sudden increases in demand. The company needs to provision large Amazon EC2 instances from an Amazon Machine Image (AMI). The instances will run in an Auto Scaling group. The company needs a solution that provides minimum initialization latency to meet the demand.

Which solution meets these requirements?

B. Enable Amazon Elastic Block Store (Amazon EBS) fast snapshot restore on a snapshot. Provision an AMI by using the snapshot. Replace the AMI in the Auto Scaling group with the new AMI.

Amazon EBS Fast Snapshot Restore: Enabling fast snapshot restore allows you to provision Amazon EBS volumes based on snapshots with faster performance. This is particularly useful when creating AMIs from snapshots, as it reduces the time it takes to create EBS volumes from those snapshots.

Minimum Initialization Latency: Fast snapshot restore helps in minimizing initialization latency as it provides a way to quickly create EBS volumes from snapshots.

Provisioning AMI from Snapshot: You can create an Amazon Machine Image (AMI) from an Amazon EBS snapshot. This allows you to capture a point-in-time snapshot of the file system, and then use that snapshot to create new instances.

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336] A company hosts a multi-tier web application that uses an Amazon Aurora MySQL DB cluster for storage. The application tier is hosted on Amazon EC2 instances. The company’s IT security guidelines mandate that the database credentials be encrypted and rotated every 14 days.

What should a solutions architect do to meet this requirement with the LEAST operational effort?

A. Create a new AWS Key Management Service (AWS KMS) encryption key. Use AWS Secrets Manager to create a new secret that uses the KMS key with the appropriate credentials. Associate the secret with the Aurora DB cluster. Configure a custom rotation period of 14 days.

A proposes to create a new AWS KMS encryption key and use AWS Secrets Manager to create a new secret that uses the KMS key with the appropriate credentials. Then, the secret will be associated with the Aurora DB cluster, and a custom rotation period of 14 days will be configured. AWS Secrets Manager will automate the process of rotating the database credentials, which will reduce the operational effort required to meet the IT security guidelines.

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337] A company has deployed a web application on AWS. The company hosts the backend database on Amazon RDS for MySQL with a primary DB instance and five read replicas to support scaling needs. The read replicas must lag no more than 1 second behind the primary DB instance. The database routinely runs scheduled stored procedures.

As traffic on the website increases, the replicas experience additional lag during periods of peak load. A solutions architect must reduce the replication lag as much as possible. The solutions architect must minimize changes to the application code and must minimize ongoing operational overhead.

Which solution will meet these requirements?

A. Migrate the database to Amazon Aurora MySQL. Replace the read replicas with Aurora Replicas, and configure Aurora Auto Scaling. Replace the stored procedures with Aurora MySQL native functions.

Amazon Aurora MySQL: Aurora Replicas in Amazon Aurora MySQL are designed to have minimal replication lag compared to traditional MySQL read replicas. Aurora is built for high performance and low replication lag, making it a suitable choice for reducing lag in read replicas.

Aurora Auto Scaling: Aurora Auto Scaling allows you to automatically adjust the number of Aurora Replicas based on actual application usage. This ensures that you have the right amount of read capacity during periods of peak load, minimizing replication lag.

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338] A solutions architect must create a disaster recovery (DR) plan for a high-volume software as a service (SaaS) platform. All data for the platform is stored in an Amazon Aurora MySQL DB cluster.

The DR plan must replicate data to a secondary AWS Region.

Which solution will meet these requirements MOST cost-effectively?

D. Set up an Aurora global database for the DB cluster. Specify a minimum of one DB instance in the secondary Region.

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339] A company has a custom application with embedded credentials that retrieves information from an Amazon RDS MySQL DB instance. Management says the application must be made more secure with the least amount of programming effort.

What should a solutions architect do to meet these requirements?

C. Create credentials on the RDS for MySQL database for the application user and store the credentials in AWS Secrets Manager. Configure the application to load the database credentials from Secrets Manager. Set up a credentials rotation schedule for the application user in the RDS for MySQL database using Secrets Manager.

C is a valid solution for securing the custom application with the least amount of programming effort. It involves creating credentials on the RDS for MySQL database for the application user and storing them in AWS Secrets Manager. The application can then be configured to load the database credentials from Secrets Manager. Additionally, the solution includes setting up a credentials rotation schedule for the application user in the RDS for MySQL database using Secrets Manager, which will automatically rotate the credentials at a specified interval without requiring any programming effort.

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340] A media company hosts its website on AWS. The website application’s architecture includes a fleet of Amazon EC2 instances behind an Application Load Balancer (ALB) and a database that is hosted on Amazon Aurora. The company’s cybersecurity team reports that the application is vulnerable to SQL injection.

How should the company resolve this issue?

A. Use AWS WAF in front of the ALB. Associate the appropriate web ACLs with AWS WAF.

AWS WAF (Web Application Firewall): AWS WAF is designed to protect web applications from common web exploits, including SQL injection. It allows you to create web access control lists (web ACLs) to define rules that filter and monitor HTTP traffic to your application.

Associating Web ACLs with AWS WAF: By using AWS WAF in front of the ALB, you can define rules to block or allow web requests based on conditions that you specify. This includes protection against SQL injection attempts. AWS WAF provides a range of conditions and rulesets that you can use to mitigate common security threats.

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341] A company has an Amazon S3 data lake that is governed by AWS Lake Formation. The company wants to create a visualization in Amazon QuickSight by joining the data in the data lake with operational data that is stored in an Amazon Aurora MySQL database. The company wants to enforce column-level authorization so that the company’s marketing team can access only a subset of columns in the database.

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

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342] A transaction processing company has weekly scripted batch jobs that run on Amazon EC2 instances. The EC2 instances are in an Auto Scaling group. The number of transactions can vary, but the baseline CPU utilization that is noted on each run is at least 60%. The company needs to provision the capacity 30 minutes before the jobs run.

Currently, engineers complete this task by manually modifying the Auto Scaling group parameters. The company does not have the resources to analyze the required capacity trends for the Auto Scaling group counts. The company needs an automated way to modify the Auto Scaling group’s desired capacity.

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

C. Create a predictive scaling policy for the Auto Scaling group. Configure the policy to scale based on forecast. Set the scaling metric to CPU utilization. Set the target value for the metric to 60%. In the policy, set the instances to pre-launch 30 minutes before the jobs run.

In general, if you have regular patterns of traffic increases and applications that take a long time to initialize, you should consider using predictive scaling. Predictive scaling can help you scale faster by launching capacity in advance of forecasted load, compared to using only dynamic scaling, which is reactive in nature.

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343] A solutions architect is designing a company’s disaster recovery (DR) architecture. The company has a MySQL database that runs on an Amazon EC2 instance in a private subnet with scheduled backup. The DR design needs to include multiple AWS Regions.

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

C. Migrate the MySQL database to an Amazon Aurora global database. Host the primary DB cluster in the primary Region. Host the secondary DB cluster in the DR Region.

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344] A company has a Java application that uses Amazon Simple Queue Service (Amazon SQS) to parse messages. The application cannot parse messages that are larger than 256 KB in size. The company wants to implement a solution to give the application the ability to parse messages as large as 50 MB.

Which solution will meet these requirements with the FEWEST changes to the code?

A. Use the Amazon SQS Extended Client Library for Java to host messages that are larger than 256 KB in Amazon S3.

Amazon SQS Extended Client Library for Java: This library is specifically designed to handle larger messages in Amazon SQS by transparently offloading them to Amazon S3. It allows you to send a reference to the S3 object in the SQS message while keeping the actual payload in S3.

Minimal Code Changes: Using the Amazon SQS Extended Client Library for Java requires minimal changes to the existing code. Developers need to integrate the library, and the library itself handles the details of storing and retrieving large messages from Amazon S3.

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345] A company wants to restrict access to the content of one of its main web applications and to protect the content by using authorization techniques available on AWS. The company wants to implement a serverless architecture and an authentication solution for fewer than 100 users. The solution needs to integrate with the main web application and serve web content globally. The solution must also scale as the company's user base grows while providing the lowest login latency possible.

Which solution will meet these requirements MOST cost-effectively?

A. Use Amazon Cognito for authentication. Use Lambda@Edge for authorization. Use Amazon CloudFront to serve the web application globally.

Amazon Cognito for Authentication: Amazon Cognito is a fully managed service for user identity and access control. It provides easy integration for authentication with a serverless architecture and supports a user pool for fewer than 100 users.

Lambda@Edge for Authorization: Lambda@Edge allows you to run custom code in response to CloudFront events, including authorization. You can implement authorization logic at the edge locations closest to the end-users, providing low-latency access.

Amazon CloudFront for Content Delivery: Amazon CloudFront is a global content delivery network (CDN) that integrates seamlessly with Lambda@Edge. CloudFront can serve the web application globally, distributing content from edge locations for low-latency access.

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346] A company has an aging network-attached storage (NAS) array in its data center. The NAS array presents SMB shares and NFS shares to client workstations. The company does not want to purchase a new NAS array. The company also does not want to incur the cost of renewing the NAS array’s support contract. Some of the data is accessed frequently, but much of the data is inactive.

A solutions architect needs to implement a solution that migrates the data to Amazon S3, uses S3 Lifecycle policies, and maintains the same look and feel for the client workstations. The solutions architect has identified AWS Storage Gateway as part of the solution.

Which type of storage gateway should the solutions architect provision to meet these requirements?

D. Amazon S3 File Gateway

Amazon S3 File Gateway provides on-premises applications with access to virtually unlimited cloud storage using NFS and SMB file interfaces. It seamlessly moves frequently accessed data to a low-latency cache while storing colder data in Amazon S3, using S3 Lifecycle policies to transition data between storage classes over tim

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347] A company has an application that is running on Amazon EC2 instances. A solutions architect has standardized the company on a particular instance family and various instance sizes based on the current needs of the company.

The company wants to maximize cost savings for the application over the next 3 years. The company needs to be able to change the instance family and sizes in the next 6 months based on application popularity and usage.

Which solution will meet these requirements MOST cost-effectively?

A. Compute Savings Plan

Compute Savings Plans provide significant cost savings over On-Demand pricing in exchange for a commitment to a consistent amount of compute usage (measured in $/hr) for a 1 or 3 year period. They offer flexibility by allowing you to switch between instance families, sizes, and AZs (Availability Zones) while still benefiting from the savings plan pricing. This aligns well with the company's requirement to change instance family and sizes based on application needs.

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348] A company collects data from a large number of participants who use wearable devices. The company stores the data in an Amazon DynamoDB table and uses applications to analyze the data. The data workload is constant and predictable. The company wants to stay at or below its forecasted budget for DynamoDB.

Which solution will meet these requirements MOST cost-effectively?

B. Use provisioned mode. Specify the read capacity units (RCUs) and write capacity units (WCUs).

In provisioned mode, you provision a specific amount of read and write capacity, which allows you to manage costs more effectively based on your expected workload. This approach is suitable when your workload is predictable, as you can provision the capacity to meet your known requirements. DynamoDB Standard-Infrequent Access (Option A) is designed for cost savings on long-term storage and retrieval of infrequently accessed data, and it might not be the best fit for a constant and predictable workload.

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349] A company stores confidential data in an Amazon Aurora PostgreSQL database in the ap-southeast-3 Region. The database is encrypted with an AWS Key Management Service (AWS KMS) customer managed key. The company was recently acquired and must securely share a backup of the database with the acquiring company’s AWS account in ap-southeast-3.

What should a solutions architect do to meet these requirements?

B. Create a database snapshot. Add the acquiring company’s AWS account to the KMS key policy. Share the snapshot with the acquiring company’s AWS account.

sharing encrypted snapshots involves granting permission not only on the snapshot itself but also on the underlying AWS Key Management Service (KMS) key used for encryption.

By adding the acquiring company's AWS account to the KMS key policy, you ensure that they have the necessary permissions to decrypt and access the snapshot.

Sharing the snapshot with the acquiring company's AWS account completes the process, allowing them to restore the database from the shared snapshot.

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350] A company uses a 100 GB Amazon RDS for Microsoft SQL Server Single-AZ DB instance in the us-east-1 Region to store customer transactions. The company needs high availability and automatic recovery for the DB instance.

The company must also run reports on the RDS database several times a year. The report process causes transactions to take longer than usual to post to the customers’ accounts. The company needs a solution that will improve the performance of the report process.

Which combination of steps will meet these requirements? (Choose two.)

A. Modify the DB instance from a Single-AZ DB instance to a Multi-AZ deployment:

Enabling Multi-AZ deployment provides high availability by replicating the database to a standby instance in another Availability Zone. This helps in automatic failover and recovery in case of a primary instance failure.

C. Create a read replica of the DB instance in a different Availability Zone. Point all requests for reports to the read replica:

By creating a read replica in a different Availability Zone, you offload the reporting workload from the primary instance, reducing the impact on transaction processing. Read replicas can be used to scale read-heavy workloads and improve overall performance.

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351] A company is moving its data management application to AWS. The company wants to transition to an event-driven architecture. The architecture needs to be more distributed and to use serverless concepts while performing the different aspects of the workflow. The company also wants to minimize operational overhead.

Which solution will meet these requirements?

D. Build out the workflow in AWS Step Functions. Use Step Functions to create a state machine. Use the state machine to invoke AWS Lambda functions to process the workflow steps.

AWS Step Functions allows you to coordinate the components of distributed applications using visual workflows. It is a fully managed service, which means you don't need to worry about operational overhead.

State machines in AWS Step Functions enable you to define the workflow of your application by specifying a series of steps. Each step can invoke an AWS Lambda function, among other things.

AWS Lambda is a serverless compute service, and it automatically scales with the workload. This aligns with the goal of using serverless concepts and minimizing operational overhead.

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352] A company is designing the network for an online multi-player game. The game uses the UDP networking protocol and will be deployed in eight AWS Regions. The network architecture needs to minimize latency and packet loss to give end users a high-quality gaming experience.

Which solution will meet these requirements?

B. Set up AWS Global Accelerator with UDP listeners and endpoint groups in each Region.

AWS Global Accelerator is designed to improve the availability and performance of applications by using static IP addresses (Anycast) and directing traffic over the AWS global network. It provides low-latency and high-performance routing, making it well-suited for applications with a global user base, such as multi-player games.

By setting up UDP listeners and endpoint groups in each Region with AWS Global Accelerator, you can efficiently route traffic to the nearest game servers, reducing latency and improving the overall gaming experience.

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353] A company hosts a three-tier web application on Amazon EC2 instances in a single Availability Zone. The web application uses a self-managed MySQL database that is hosted on an EC2 instance to store data in an Amazon Elastic Block Store (Amazon EBS) volume. The MySQL database currently uses a 1 TB Provisioned IOPS SSD (io2) EBS volume. The company expects traffic of 1,000 IOPS for both reads and writes at peak traffic.

The company wants to minimize any disruptions, stabilize performance, and reduce costs while retaining the capacity for double the IOPS. The company wants to move the database tier to a fully managed solution that is highly available and fault tolerant.

Which solution will meet these requirements MOST cost-effectively?

B. Use a Multi-AZ deployment of an Amazon RDS for MySQL DB instance with a General Purpose SSD (gp2) EBS volume.

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354] A company hosts a serverless application on AWS. The application uses Amazon API Gateway, AWS Lambda, and an Amazon RDS for PostgreSQL database. The company notices an increase in application errors that result from database connection timeouts during times of peak traffic or unpredictable traffic. The company needs a solution that reduces the application failures with the least amount of change to the code.

What should a solutions architect do to meet these requirements?

B. Enable RDS Proxy on the RDS DB instance.

RDS Proxy is a fully managed, highly available database proxy that can handle database connections for serverless and highly scalable applications. It helps manage database connections efficiently, reducing issues related to connection timeouts and errors.

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355] A company is migrating an old application to AWS. The application runs a batch job every hour and is CPU intensive. The batch job takes 15 minutes on average with an on-premises server. The server has 64 virtual CPU (vCPU) and 512 GiB of memory.

Which solution will run the batch job within 15 minutes with the LEAST operational overhead?

D. Use AWS Batch on Amazon EC2.

AWS Batch on Amazon EC2: AWS Batch is a fully managed service for batch computing that dynamically provisions the optimal quantity and type of compute resources (Amazon EC2 instances) based on the volume and specific resource requirements of the batch jobs. If the batch job is CPU-intensive and can be parallelized, AWS Batch can efficiently manage the compute resources needed for the job, and it provides a higher level of control over the environment compared to serverless options like AWS Lambda.

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356] A company stores its data objects in Amazon S3 Standard storage. A solutions architect has found that 75% of the data is rarely accessed after 30 days. The company needs all the data to remain immediately accessible with the same high availability and resiliency, but the company wants to minimize storage costs.

Which storage solution will meet these requirements?

B. Move the data objects to S3 Standard-Infrequent Access (S3 Standard-IA) after 30 days.

S3 Standard-Infrequent Access (S3 Standard-IA): This storage class is designed for infrequently accessed data but still provides low-latency and high-throughput performance. It maintains the same high availability and durability as S3 Standard, making it suitable for data that is accessed less frequently.

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357] A gaming company is moving its public scoreboard from a data center to the AWS Cloud. The company uses Amazon EC2 Windows Server instances behind an Application Load Balancer to host its dynamic application. The company needs a highly available storage solution for the application. The application consists of static files and dynamic server-side code.

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

A. Store the static files on Amazon S3. Use Amazon CloudFront to cache objects at the edge.

D. Store the server-side code on Amazon FSx for Windows File Server. Mount the FSx for Windows File Server volume on each EC2 instance to share the files.

Amazon S3 is a highly scalable and durable object storage service, and it is well-suited for storing static files. Using CloudFront as a content delivery network (CDN) improves the delivery of static content by caching objects at edge locations, reducing latency for end users.

Amazon FSx for Windows File Server provides a fully managed Windows file system that is accessible from Windows-based EC2 instances. This is suitable for storing dynamic server-side code that requires file sharing across multiple instances. It offers high availability and supports Windows-native features.

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358] A social media company runs its application on Amazon EC2 instances behind an Application Load Balancer (ALB). The ALB is the origin for an Amazon CloudFront distribution. The application has more than a billion images stored in an Amazon S3 bucket and processes thousands of images each second. The company wants to resize the images dynamically and serve appropriate formats to clients.

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

C. Use a Lambda@Edge function with an external image management library. Associate the Lambda@Edge function with the CloudFront behaviors that serve the images.

Lambda@Edge: Allows you to run code in response to CloudFront events without provisioning or managing servers. In this case, a Lambda@Edge function can be used to dynamically resize images based on the request.

External image management library: Since the company wants to minimize operational overhead, using an external image management library within a Lambda@Edge function is a good choice. This eliminates the need to manage EC2 instances or other infrastructure.

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359] A hospital needs to store patient records in an Amazon S3 bucket. The hospital’s compliance team must ensure that all protected health information (PHI) is encrypted in transit and at rest. The compliance team must administer the encryption key for data at rest.

Which solution will meet these requirements?

C. Use the aws:SecureTransport condition on S3 bucket policies to allow only encrypted connections over HTTPS (TLS). Configure default encryption for each S3 bucket to use server-side encryption with AWS KMS keys (SSE-KMS). Assign the compliance team to manage the KMS keys.

it allows the compliance team to manage the KMS keys used for server-side encryption, thereby providing the necessary control over the encryption keys. Additionally, the use of the "aws:SecureTransport" condition on the bucket policy ensures that all connections to the S3 bucket are encrypted in transit.

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360] A company uses Amazon API Gateway to run a private gateway with two REST APIs in the same VPC. The BuyStock RESTful web service calls the CheckFunds RESTful web service to ensure that enough funds are available before a stock can be purchased. The company has noticed in the VPC flow logs that the BuyStock RESTful web service calls the CheckFunds RESTful web service over the internet instead of through the VPC. A solutions architect must implement a solution so that the APIs communicate through the VPC.

Which solution will meet these requirements with the FEWEST changes to the code?

B. Use an interface endpoint.

Interface Endpoint (VPC Endpoint for API Gateway): An interface endpoint allows private connectivity to API Gateway within your VPC. By creating a VPC endpoint for API Gateway, you can ensure that the communication between the BuyStock and CheckFunds RESTful web services stays within the VPC, eliminating the need for traffic to go over the internet.

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361] A company hosts a multiplayer gaming application on AWS. The company wants the application to read data with sub-millisecond latency and run one-time queries on historical data.

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

C. Use Amazon DynamoDB with DynamoDB Accelerator (DAX) for data that is frequently accessed. Export the data to an Amazon S3 bucket by using DynamoDB table export. Run one-time queries on the data in Amazon S3 by using Amazon Athena.

Amazon DynamoDB with DynamoDB Accelerator (DAX):

DynamoDB is a highly scalable and low-latency NoSQL database, suitable for frequently accessed data.

DynamoDB Accelerator (DAX) is a caching layer that provides sub-millisecond read latencies for DynamoDB.

Export Data to Amazon S3:

Use DynamoDB table export to periodically export historical data to an Amazon S3 bucket.

This allows you to store historical data in a cost-effective manner while still benefiting from DynamoDB for frequently accessed data.

Amazon Athena for One-time Queries:

Amazon Athena allows you to run SQL queries directly on data stored in Amazon S3.

By using Athena, you can perform one-time queries on the historical data without the need to manage a separate database.

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362] A company uses a payment processing system that requires messages for a particular payment ID to be received in the same order that they were sent. Otherwise, the payments might be processed incorrectly.

Which actions should a solutions architect take to meet this requirement? (Choose two.)

B. Write the messages to an Amazon Kinesis data stream with the payment ID as the partition key.

E. Write the messages to an Amazon Simple Queue Service (Amazon SQS) FIFO queue. Set the message group to use the payment ID.

Amazon Kinesis data streams can be used with partition keys to ensure that messages with the same partition key are processed in order. In this case, using the payment ID as the partition key will help maintain the order of messages.

SQS FIFO queues ensure that messages are processed in the order they are received. By using message groups and setting the payment ID as the message group, you can guarantee that messages for the same payment ID will be processed sequentially.

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363] A company is building a game system that needs to send unique events to separate leaderboard, matchmaking, and authentication services concurrently. The company needs an AWS event-driven system that guarantees the order of the events.

Which solution will meet these requirements?

B. Amazon Simple Notification Service (Amazon SNS) FIFO topics

SNS FIFO also can send events or messages cocurrently to many subscribers while maintaining the order it receives. SNS fanout pattern is set in standard SNS which is commonly used to fan out events to large number of subscribers and usually for duplicated messages.

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364] A hospital is designing a new application that gathers symptoms from patients. The hospital has decided to use Amazon Simple Queue Service (Amazon SQS) and Amazon Simple Notification Service (Amazon SNS) in the architecture.

A solutions architect is reviewing the infrastructure design. Data must be encrypted at rest and in transit. Only authorized personnel of the hospital should be able to access the data.

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

B. Turn on server-side encryption on the SNS components by using an AWS Key Management Service (AWS KMS) customer managed key. Apply a key policy to restrict key usage to a set of authorized principals.

D. Turn on server-side encryption on the SQS components by using an AWS Key Management Service (AWS KMS) customer managed key. Apply a key policy to restrict key usage to a set of authorized principals. Set a condition in the queue policy to allow only encrypted connections over TLS.

This option ensures that data at rest in the SNS components is encrypted using an AWS KMS customer managed key. The key policy restricts key usage to authorized personnel.

This option ensures that data at rest in the SQS components is encrypted using an AWS KMS customer managed key. The key policy restricts key usage to authorized personnel, and the queue policy ensures that only encrypted connections over TLS are allowed.

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365] A company runs a web application that is backed by Amazon RDS. A new database administrator caused data loss by accidentally editing information in a database table. To help recover from this type of incident, the company wants the ability to restore the database to its state from 5 minutes before any change within the last 30 days.

Which feature should the solutions architect include in the design to meet this requirement?

C. Automated backups

Amazon RDS (Relational Database Service) can automatically create backups of your database every day.

These backups are like snapshots of your entire database, capturing all the data.

They happen automatically, so you don't have to remember to do it.

You can decide how long you want to keep these backup snapshots. For example, you might choose to keep them for up to 35 days.

This is like saying, "I want to keep the pictures of my database for the last 35 days."

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367] A company is using Amazon Route 53 latency-based routing to route requests to its UDP-based application for users around the world. The application is hosted on redundant servers in the company's on-premises data centers in the United States, Asia, and Europe. The company’s compliance requirements state that the application must be hosted on premises. The company wants to improve the performance and availability of the application.

What should a solutions architect do to meet these requirements?

A. Configure three Network Load Balancers (NLBs) in the three AWS Regions to address the on-premises endpoints. Create an accelerator by using AWS Global Accelerator, and register the NLBs as its endpoints. Provide access to the application by using a CNAME that points to the accelerator DNS.

This option suggests configuring three Network Load Balancers (NLBs) in the three AWS Regions to address on-premises endpoints. While AWS Global Accelerator is used, the NLBs are registered as its endpoints. This does not meet the requirement of hosting the application on premises.

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368] A solutions architect wants all new users to have specific complexity requirements and mandatory rotation periods for IAM user passwords.

What should the solutions architect do to accomplish this?

A. Set an overall password policy for the entire AWS account.

Amazon Web Services (AWS) allows you to set an account-wide password policy using AWS Identity and Access Management (IAM). This policy defines the rules and requirements for all IAM users in the AWS account. It's a centralized approach to enforce security measures consistently across all users. In this case, the solutions architect can set the specific complexity requirements and mandatory rotation periods by configuring the password policy at the AWS account level.

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369] A company has migrated an application to Amazon EC2 Linux instances. One of these EC2 instances runs several 1-hour tasks on a schedule. These tasks were written by different teams and have no common programming language. The company is concerned about performance and scalability while these tasks run on a single instance. A solutions architect needs to implement a solution to resolve these concerns.

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

A. Use AWS Batch to run the tasks as jobs. Schedule the jobs by using Amazon EventBridge (Amazon CloudWatch Events).

AWS Batch: AWS Batch is a fully managed service for running batch computing workloads. It dynamically provisions the optimal quantity and type of compute resources based on the volume and specific resource requirements of the batch jobs. It allows you to run tasks written in different programming languages with minimal operational overhead.

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370] A company runs a public three-tier web application in a VPC. The application runs on Amazon EC2 instances across multiple Availability Zones. The EC2 instances that run in private subnets need to communicate with a license server over the internet. The company needs a managed solution that minimizes operational maintenance.

Which solution meets these requirements?

C. Provision a NAT gateway in a public subnet. Modify each private subnet's route table with a default route that points to the NAT gateway.

NAT Gateway: A NAT gateway is a managed service provided by AWS that allows EC2 instances in private subnets to initiate outbound traffic to the internet while preventing unsolicited inbound traffic from reaching those instances. NAT gateways are fully managed, highly available, and require minimal maintenance.

Public Subnet: Placing the NAT gateway in a public subnet allows it to have access to the internet, fulfilling the requirement for private instances to communicate with a license server over the internet.

Default Route: Modifying each private subnet's route table with a default route that points to the NAT gateway ensures that traffic from private instances is directed through the NAT gateway for outbound communication.

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371] A company needs to create an Amazon Elastic Kubernetes Service (Amazon EKS) cluster to host a digital media streaming application. The EKS cluster will use a managed node group that is backed by Amazon Elastic Block Store (Amazon EBS) volumes for storage. The company must encrypt all data at rest by using a customer managed key that is stored in AWS Key Management Service (AWS KMS).

Which combination of actions will meet this requirement with the LEAST operational overhead? (Choose two.)

C. Enable EBS encryption by default in the AWS Region where the EKS cluster will be created. Select the customer managed key as the default key.

D. Create the EKS cluster. Create an IAM role that has a policy that grants permission to the customer managed key. Associate the role with the EKS cluster.

EBS encryption is set regionally. AWS account is global but it does not mean EBS encryption is enable by default at account level. default EBS encryption is a regional setting within your AWS account. Enabling it in a specific region ensures that all new EBS volumes created in that region are encrypted by default, using either the default AWS managed key or a customer managed key that you specify.

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372] A company wants to migrate an Oracle database to AWS. The database consists of a single table that contains millions of geographic information systems (GIS) images that are high resolution and are identified by a geographic code.

When a natural disaster occurs, tens of thousands of images get updated every few minutes. Each geographic code has a single image or row that is associated with it. The company wants a solution that is highly available and scalable during such events.

Which solution meets these requirements MOST cost-effectively?

D. Store the images in Amazon S3 buckets. Store geographic codes and image S3 URLs in a database table. Use Oracle running on an Amazon RDS Multi-AZ DB instance.

In this we cannot used DynamoDB database bcz it is a NOSQL database and we want a SQL database bcz oracle database is SQL DATABASE thats why the correct ans is D. bcz used S3 bucket for storing data and used Oracle database for SQL we used Amazon RDS.

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373] A company has an application that collects data from IoT sensors on automobiles. The data is streamed and stored in Amazon S3 through Amazon Kinesis Data Firehose. The data produces trillions of S3 objects each year. Each morning, the company uses the data from the previous 30 days to retrain a suite of machine learning (ML) models.

Four times each year, the company uses the data from the previous 12 months to perform analysis and train other ML models. The data must be available with minimal delay for up to 1 year. After 1 year, the data must be retained for archival purposes.

Which storage solution meets these requirements MOST cost-effectively?

D. Use the S3 Standard storage class. Create an S3 Lifecycle policy to transition objects to S3 Standard-Infrequent Access (S3 Standard-IA) after 30 days, and then to S3 Glacier Deep Archive after 1 year.

S3 Standard Storage Class:

Use S3 Standard for the first 30 days because it's the default storage class for frequently accessed data.

This is suitable for the initial period when you need quick and frequent access to your data.

S3 Standard-Infrequent Access (S3 Standard-IA) Storage Class:

After the initial 30 days, transition the data to S3 Standard-IA.

S3 Standard-IA is designed for data that is accessed less frequently but still requires quick retrieval when needed.

It's more cost-effective for data that is accessed less often compared to S3 Standard.

S3 Glacier Deep Archive:

After 1 year, transition the data from S3 Standard-IA to S3 Glacier Deep Archive using an S3 Lifecycle policy.

S3 Glacier Deep Archive is the most cost-effective option for long-term archival storage.

This is suitable for storing data that you need to retain for compliance or archival purposes but don't need to access frequently.

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374] A company is running several business applications in three separate VPCs within the us-east-1 Region. The applications must be able to communicate between VPCs. The applications also must be able to consistently send hundreds of gigabytes of data each day to a latency-sensitive application that runs in a single on-premises data center.

A solutions architect needs to design a network connectivity solution that maximizes cost-effectiveness.

Which solution meets these requirements?

D. Set up one AWS Direct Connect connection from the data center to AWS. Create a transit gateway, and attach each VPC to the transit gateway. Establish connectivity between the Direct Connect connection and the transit gateway.

AWS Direct Connect: Using a single AWS Direct Connect connection from the data center to AWS is more cost-effective than setting up multiple connections. It provides a dedicated and consistent network connection between the on-premises data center and AWS.

Transit Gateway: The use of a transit gateway simplifies network connectivity. It acts as a hub, allowing communication between the VPCs and the on-premises data center without requiring separate connections for each VPC. This reduces complexity and costs associated with managing multiple connections.

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375] An ecommerce company is building a distributed application that involves several serverless functions and AWS services to complete order-processing tasks. These tasks require manual approvals as part of the workflow. A solutions architect needs to design an architecture for the order-processing application. The solution must be able to combine multiple AWS Lambda functions into responsive serverless applications. The solution also must orchestrate data and services that run on Amazon EC2 instances, containers, or on-premises servers.

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

A. Use AWS Step Functions to build the application.

Step Functions provide a way to coordinate and orchestrate multiple AWS services, including AWS Lambda functions, in a serverless workflow. They allow you to build applications by connecting various serverless functions and services without managing the underlying infrastructure.

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376] A company has launched an Amazon RDS for MySQL DB instance. Most of the connections to the database come from serverless applications. Application traffic to the database changes significantly at random intervals. At times of high demand, users report that their applications experience database connection rejection errors.

Which solution will resolve this issue with the LEAST operational overhead?

A. Create a proxy in RDS Proxy. Configure the users’ applications to use the DB instance through RDS Proxy.

RDS Proxy is a fully managed, highly available database proxy for Amazon RDS that makes applications more scalable, more resilient to database failures, and more secure. It automatically routes database traffic to the appropriate DB instance, handling connection pooling and failover.

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377] A company recently deployed a new auditing system to centralize information about operating system versions, patching, and installed software for Amazon EC2 instances. A solutions architect must ensure all instances provisioned through EC2 Auto Scaling groups successfully send reports to the auditing system as soon as they are launched and terminated.

Which solution achieves these goals MOST efficiently?

B. Use EC2 Auto Scaling lifecycle hooks to run a custom script to send data to the audit system when instances are launched and terminated.

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378] A company is developing a real-time multiplayer game that uses UDP for communications between the client and servers in an Auto Scaling group. Spikes in demand are anticipated during the day, so the game server platform must adapt accordingly. Developers want to store gamer scores and other non-relational data in a database solution that will scale without intervention.

Which solution should a solutions architect recommend?

B. Use a Network Load Balancer for traffic distribution and Amazon DynamoDB on-demand for data storage.

Think of an NLB like a traffic cop for your game. It helps distribute and manage the incoming traffic from players to your game servers. It ensures that the load is balanced across your servers, which is crucial for handling the expected spikes in demand.

DynamoDB is a type of database that can store data for your game, such as gamer scores. "On-demand" means that DynamoDB automatically scales to handle the amount of data and traffic your game is experiencing.

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379] A company hosts a frontend application that uses an Amazon API Gateway API backend that is integrated with AWS Lambda. When the API receives requests, the Lambda function loads many libraries. Then the Lambda function connects to an Amazon RDS database, processes the data, and returns the data to the frontend application. The company wants to ensure that response latency is as low as possible for all its users with the fewest number of changes to the company's operations.

Which solution will meet these requirements?

B. Configure provisioned concurrency for the Lambda function that handles the requests.

Provisioned Concurrency: Provisioned concurrency allows you to pre-warm a specific number of instances of your Lambda function. This ensures that there are already instances available to handle incoming requests, reducing the cold start latency. Since the Lambda function loads many libraries, reducing cold start latency is crucial for optimizing response time.

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380] A company is migrating its on-premises workload to the AWS Cloud. The company already uses several Amazon EC2 instances and Amazon RDS DB instances. The company wants a solution that automatically starts and stops the EC2 instances and DB instances outside of business hours. The solution must minimize cost and infrastructure maintenance.

Which solution will meet these requirements?

D. Create an AWS Lambda function that will start and stop the EC2 instances and DB instances. Configure Amazon EventBridge to invoke the Lambda function on a schedule.

AWS Lambda Function: Create a Lambda function that contains the logic to start and stop the EC2 instances and DB instances. Lambda is a serverless compute service that allows you to run code without provisioning or managing servers. It is a cost-effective and maintenance-free solution.

Amazon EventBridge: Configure EventBridge (formerly CloudWatch Events) to invoke the Lambda function on a schedule. EventBridge provides a reliable and scalable way to schedule the execution of Lambda functions at specified intervals, such as starting and stopping instances during business hours.

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381] A company hosts a three-tier web application that includes a PostgreSQL database. The database stores the metadata from documents. The company searches the metadata for key terms to retrieve documents that the company reviews in a report each month. The documents are stored in Amazon S3. The documents are usually written only once, but they are updated frequently.

The reporting process takes a few hours with the use of relational queries. The reporting process must not prevent any document modifications or the addition of new documents. A solutions architect needs to implement a solution to speed up the reporting process.

Which solution will meet these requirements with the LEAST amount of change to the application code?

B. Set up a new Amazon Aurora PostgreSQL DB cluster that includes an Aurora Replica. Issue queries to the Aurora Replica to generate the reports.

Amazon Aurora PostgreSQL DB cluster that includes an Aurora Replica. Issue queries to the Aurora Replica to generate the reports) is the best option for speeding up the reporting process for a three-tier web application that includes a PostgreSQL database storing metadata from documents, while not impacting document modifications or additions, with the least amount of change to the application code.

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382] A company has a three-tier application on AWS that ingests sensor data from its users’ devices. The traffic flows through a Network Load Balancer (NLB), then to Amazon EC2 instances for the web tier, and finally to EC2 instances for the application tier. The application tier makes calls to a database.

What should a solutions architect do to improve the security of the data in transit?

A. Configure a TLS listener. Deploy the server certificate on the NLB.

TLS Listener on NLB: By configuring a TLS (Transport Layer Security) listener on the NLB, you can encrypt the traffic between the users' devices and the web tier EC2 instances. This helps protect the data in transit from eavesdropping and other potential security threats.

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383] A company is planning to migrate a commercial off-the-shelf application from its on-premises data center to AWS. The software has a software licensing model using sockets and cores with predictable capacity and uptime requirements. The company wants to use its existing licenses, which were purchased earlier this year.

Which Amazon EC2 pricing option is the MOST cost-effective?

A. Dedicated Reserved Hosts

A Dedicated Host is a physical server with EC2 instance capacity fully dedicated to your use. When you launch instances on a Dedicated Host, those instances run on the dedicated hardware of that host.

Dedicated Hosts provide control over the placement of instances for compliance, licensing, or regulatory requirements.

You can purchase Dedicated Hosts on a reservation model (Reserved Hosts) or pay for them on-demand. The host remains dedicated to you for the specified term in the case of Reserved Hosts.

Dedicated Hosts can be useful for workloads with specific licensing models tied to physical sockets or cores.

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384] A company runs an application on Amazon EC2 Linux instances across multiple Availability Zones. The application needs a storage layer that is highly available and Portable Operating System Interface (POSIX)-compliant. The storage layer must provide maximum data durability and must be shareable across the EC2 instances. The data in the storage layer will be accessed frequently for the first 30 days and will be accessed infrequently after that time.

Which solution will meet these requirements MOST cost-effectively?

C. Use the Amazon Elastic File System (Amazon EFS) Standard storage class. Create a lifecycle management policy to move infrequently accessed data to EFS Standard-Infrequent Access (EFS Standard-IA).

Amazon EFS provides scalable and highly available file storage in the cloud. The Standard storage class is designed for frequently accessed data, making it suitable for the initial 30 days of frequent access.

You can create a lifecycle management policy for EFS that automatically transitions infrequently accessed files to the EFS Standard-Infrequent Access (EFS Standard-IA) storage class. This helps optimize costs by moving less frequently accessed data to a lower-cost storage tier.

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385] A solutions architect is creating a new VPC design. There are two public subnets for the load balancer, two private subnets for web servers, and two private subnets for MySQL. The web servers use only HTTPS. The solutions architect has already created a security group for the load balancer allowing port 443 from 0.0.0.0/0. Company policy requires that each resource has the least access required to still be able to perform its tasks.

Which additional configuration strategy should the solutions architect use to meet these requirements?

C. Create a security group for the web servers and allow port 443 from the load balancer. Create a security group for the MySQL servers and allow port 3306 from the web servers security group.

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386] An ecommerce company is running a multi-tier application on AWS. The front-end and backend tiers both run on Amazon EC2, and the database runs on Amazon RDS for MySQL. The backend tier communicates with the RDS instance. There are frequent calls to return identical datasets from the database that are causing performance slowdowns.

Which action should be taken to improve the performance of the backend?

B. Implement Amazon ElastiCache to cache the large datasets.

Amazon ElastiCache: Amazon ElastiCache is a fully managed in-memory caching service. By implementing ElastiCache, you can cache frequently accessed data in-memory, reducing the need to make repeated calls to the database. This helps improve the performance of your application by serving data directly from the cache instead of querying the database every time.

Caching Large Datasets: In scenarios where identical datasets are frequently requested, caching the results in ElastiCache can significantly reduce the load on the database and improve response times for subsequent requests. It is particularly effective for read-heavy workloads where the data does not change frequently.

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387] A new employee has joined a company as a deployment engineer. The deployment engineer will be using AWS CloudFormation templates to create multiple AWS resources. A solutions architect wants the deployment engineer to perform job activities while following the principle of least privilege.

Which combination of actions should the solutions architect take to accomplish this goal? (Choose two.)

D. Create a new IAM user for the deployment engineer and add the IAM user to a group that has an IAM policy that allows AWS CloudFormation actions only.

E. Create an IAM role for the deployment engineer to explicitly define the permissions specific to the AWS CloudFormation stack and launch stacks using that IAM role.

This ensures that the IAM user has the necessary permissions for AWS CloudFormation but not unnecessary permissions for other AWS services.

IAM roles are more suitable for temporary elevated permissions needed during AWS CloudFormation stack operations. The deployment engineer can assume the role when required, limiting their permissions to only what is needed for those specific actions.

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388] A company is deploying a two-tier web application in a VPC. The web tier is using an Amazon EC2 Auto Scaling group with public subnets that span multiple Availability Zones. The database tier consists of an Amazon RDS for MySQL DB instance in separate private subnets. The web tier requires access to the database to retrieve product information.

The web application is not working as intended. The web application reports that it cannot connect to the database. The database is confirmed to be up and running. All configurations for the network ACLs, security groups, and route tables are still in their default states.

What should a solutions architect recommend to fix the application?

D. Add an inbound rule to the security group of the database tier’s RDS instance to allow traffic from the web tiers security group.

Security Groups: Security groups act as virtual firewalls for your instances to control inbound and outbound traffic. By default, they deny all inbound traffic. In this scenario, the default security group associated with the RDS instance is likely denying incoming traffic from the web tier.

Inbound Rule: To allow traffic from the web tier's EC2 instances to the database tier's RDS instance, you need to add an inbound rule to the security group associated with the RDS instance. This rule should permit traffic from the security group associated with the web tier's EC2 instances.

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389] A company has a large dataset for its online advertising business stored in an Amazon RDS for MySQL DB instance in a single Availability Zone. The company wants business reporting queries to run without impacting the write operations to the production DB instance.

Which solution meets these requirements?

A. Deploy RDS read replicas to process the business reporting queries.

Amazon RDS provides the ability to create read replicas of a source DB instance. Read replicas can be used to offload read traffic from the primary (write) DB instance, allowing you to scale read operations horizontally. This is particularly useful for scenarios where you want to run reporting queries without affecting the write performance of the production DB instance.

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390] A company hosts a three-tier ecommerce application on a fleet of Amazon EC2 instances. The instances run in an Auto Scaling group behind an Application Load Balancer (ALB). All ecommerce data is stored in an Amazon RDS for MariaDB Multi-AZ DB instance.

The company wants to optimize customer session management during transactions. The application must store session data durably.

Which solutions will meet these requirements? (Choose two.)

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391] A company needs a backup strategy for its three-tier stateless web application. The web application runs on Amazon EC2 instances in an Auto Scaling group with a dynamic scaling policy that is configured to respond to scaling events. The database tier runs on Amazon RDS for PostgreSQL. The web application does not require temporary local storage on the EC2 instances. The company’s recovery point objective (RPO) is 2 hours.

The backup strategy must maximize scalability and optimize resource utilization for this environment.

Which solution will meet these requirements?

C. Retain the latest Amazon Machine Images (AMIs) of the web and application tiers. Enable automated backups in Amazon RDS and use point-in-time recovery to meet the RPO.

Snapshots of EBS volumes would be necessary if you want to back up the entire EC2 instance, including any applications and temporary data stored on the EBS volumes attached to the instances. When you take a snapshot of an EBS volume, it backs up the entire contents of that volume. This ensures that you can restore the entire EC2 instance to a specific point in time more quickly. However, if there is no temporary data stored on the EBS volumes, then snapshots of EBS volumes are not necessary.

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392] A company wants to deploy a new public web application on AWS. The application includes a web server tier that uses Amazon EC2 instances. The application also includes a database tier that uses an Amazon RDS for MySQL DB instance.

The application must be secure and accessible for global customers that have dynamic IP addresses.

How should a solutions architect configure the security groups to meet these requirements?

A. Configure the security group for the web servers to allow inbound traffic on port 443 from 0.0.0.0/0. Configure the security group for the DB instance to allow inbound traffic on port 3306 from the security group of the web servers

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393] A payment processing company records all voice communication with its customers and stores the audio files in an Amazon S3 bucket. The company needs to capture the text from the audio files. The company must remove from the text any personally identifiable information (PII) that belongs to customers.

What should a solutions architect do to meet these requirements?

C. Configure an Amazon Transcribe transcription job with PII redaction turned on. When an audio file is uploaded to the S3 bucket, invoke an AWS Lambda function to start the transcription job. Store the output in a separate S3 bucket.

Amazon Transcribe is a fully managed service provided by Amazon Web Services (AWS) that enables automatic speech recognition (ASR). It allows developers to convert spoken language into written text, making it useful for various applications such as transcription services, voice analytics, and content indexing.

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394] A company is running a multi-tier ecommerce web application in the AWS Cloud. The application runs on Amazon EC2 instances with an Amazon RDS for MySQL Multi-AZ DB instance. Amazon RDS is configured with the latest generation DB instance with 2,000 GB of storage in a General Purpose SSD (gp3) Amazon Elastic Block Store (Amazon EBS) volume. The database performance affects the application during periods of high demand.

A database administrator analyzes the logs in Amazon CloudWatch Logs and discovers that the application performance always degrades when the number of read and write IOPS is higher than 20,000.

What should a solutions architect do to improve the application performance?

C. Replace the volume with a Provisioned IOPS SSD (io2) volume.

io2 volumes are designed for high-performance, low-latency applications such as databases.

Provisioned IOPS allows you to specify the amount of IOPS the volume needs, ensuring consistent performance.

For applications with high demand and where consistent performance is crucial, io2 volumes provide better control over IOPS compared to gp3 volumes.

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395] An IAM user made several configuration changes to AWS resources in their company's account during a production deployment last week. A solutions architect learned that a couple of security group rules are not configured as desired. The solutions architect wants to confirm which IAM user was responsible for making changes.

Which service should the solutions architect use to find the desired information?

C. AWS CloudTrail

AWS CloudTrail is a service provided by Amazon Web Services (AWS) that allows you to monitor and log AWS account activity. It records API calls made on your AWS account, capturing information such as the identity of the caller, the time of the API call, the source IP address, the request parameters, and the response elements returned by the AWS service.

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396] A company has implemented a self-managed DNS service on AWS. The solution consists of the following:

• Amazon EC2 instances in different AWS Regions

• Endpoints of a standard accelerator in AWS Global Accelerator

The company wants to protect the solution against DDoS attacks.

What should a solutions architect do to meet this requirement?

A. Subscribe to AWS Shield Advanced. Add the accelerator as a resource to protect.

AWS Shield Advanced is a managed Distributed Denial of Service (DDoS) protection service provided by AWS.

By subscribing to AWS Shield Advanced, you gain access to enhanced DDoS protection capabilities, including automatic detection and mitigation of DDoS attacks.

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397] An ecommerce company needs to run a scheduled daily job to aggregate and filter sales records for analytics. The company stores the sales records in an Amazon S3 bucket. Each object can be up to 10 GB in size. Based on the number of sales events, the job can take up to an hour to complete. The CPU and memory usage of the job are constant and are known in advance.

A solutions architect needs to minimize the amount of operational effort that is needed for the job to run.

Which solution meets these requirements?

C. Create an Amazon Elastic Container Service (Amazon ECS) cluster with an AWS Fargate launch type. Create an Amazon EventBridge scheduled event that launches an ECS task on the cluster to run the job.

C. Amazon ECS with Fargate: Fargate allows you to run containers without managing the underlying infrastructure. You can schedule the ECS task with EventBridge, and since Fargate manages the resources, you don't need to worry about scaling or infrastructure maintenance. This is a good fit for long-running jobs.

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398] A company needs to transfer 600 TB of data from its on-premises network-attached storage (NAS) system to the AWS Cloud. The data transfer must be complete within 2 weeks. The data is sensitive and must be encrypted in transit. The company’s internet connection can support an upload speed of 100 Mbps.

Which solution meets these requirements MOST cost-effectively?

C. Use the AWS Snow Family console to order several AWS Snowball Edge Storage Optimized devices. Use the devices to transfer the data to Amazon S3.

Transferring 600 TB of data over a 100 Mbps connection would take a very long time. AWS Snowball Edge devices allow for offline data transfer, and you can transfer the data to the devices at your location before shipping them to AWS. This way, you are not constrained by the upload speed during the 2-week period.

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399] A financial company hosts a web application on AWS. The application uses an Amazon API Gateway Regional API endpoint to give users the ability to retrieve current stock prices. The company’s security team has noticed an increase in the number of API requests. The security team is concerned that HTTP flood attacks might take the application offline.

A solutions architect must design a solution to protect the application from this type of attack.

Which solution meets these requirements with the LEAST operational overhead?

B. Create a Regional AWS WAF web ACL with a rate-based rule. Associate the web ACL with the API Gateway stage.

Rate-based Rule with AWS WAF: AWS WAF provides protection against various web application attacks, including HTTP flood attacks. By using a rate-based rule, you can set thresholds for the number of requests from a client IP within a specified time period. This helps in detecting and mitigating HTTP flood attacks effectively.

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400] A meteorological startup company has a custom web application to sell weather data to its users online. The company uses Amazon DynamoDB to store its data and wants to build a new service that sends an alert to the managers of four internal teams every time a new weather event is recorded. The company does not want this new service to affect the performance of the current application.

What should a solutions architect do to meet these requirements with the LEAST amount of operational overhead?

C. Enable Amazon DynamoDB Streams on the table. Use triggers to write to a single Amazon Simple Notification Service (Amazon SNS) topic to which the teams can subscribe.

Using a single SNS topic simplifies the notification process. The trigger can publish a message to this topic, and each internal team can subscribe to this topic. This reduces the operational overhead compared to managing multiple SNS topics (Option B).

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401] A company wants to use the AWS Cloud to make an existing application highly available and resilient. The current version of the application resides in the company's data center. The application recently experienced data loss after a database server crashed because of an unexpected power outage.

The company needs a solution that avoids any single points of failure. The solution must give the application the ability to scale to meet user demand.

Which solution will meet these requirements?

A. Deploy the application servers by using Amazon EC2 instances in an Auto Scaling group across multiple Availability Zones. Use an Amazon RDS DB instance in a Multi-AZ configuration.

Auto Scaling Across Multiple Availability Zones: Deploying application servers using EC2 instances in an Auto Scaling group across multiple Availability Zones (AZs) helps avoid a single point of failure. If one AZ experiences an issue, the application can continue to operate in another AZ.

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402] A company needs to ingest and handle large amounts of streaming data that its application generates. The application runs on Amazon EC2 instances and sends data to Amazon Kinesis Data Streams, which is configured with default settings. Every other day, the application consumes the data and writes the data to an Amazon S3 bucket for business intelligence (BI) processing. The company observes that Amazon S3 is not receiving all the data that the application sends to Kinesis Data Streams.

What should a solutions architect do to resolve this issue?

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403] A developer has an application that uses an AWS Lambda function to upload files to Amazon S3 and needs the required permissions to perform the task. The developer already has an IAM user with valid IAM credentials required for Amazon S3.

What should a solutions architect do to grant the permissions?

D. Create an IAM execution role with the required permissions and attach the IAM role to the Lambda function.

o grant the necessary permissions to an AWS Lambda function to upload files to Amazon S3, a solutions architect should create an IAM execution role with the required permissions and attach the IAM role to the Lambda function. This approach follows the principle of least privilege and ensures that the Lambda function can only access the resources it needs to perform its specific task.

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404] A company has deployed a serverless application that invokes an AWS Lambda function when new documents are uploaded to an Amazon S3 bucket. The application uses the Lambda function to process the documents. After a recent marketing campaign, the company noticed that the application did not process many of the documents.

What should a solutions architect do to improve the architecture of this application?

D. Create an Amazon Simple Queue Service (Amazon SQS) queue. Send the requests to the queue. Configure the queue as an event source for Lambda.

Introducing Amazon SQS as a queue allows for better decoupling between the S3 events and the document processing. This ensures that the Lambda function is not overwhelmed with spikes in incoming events, leading to missed document processing.

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405] A solutions architect is designing the architecture for a software demonstration environment. The environment will run on Amazon EC2 instances in an Auto Scaling group behind an Application Load Balancer (ALB). The system will experience significant increases in traffic during working hours but is not required to operate on weekends.

Which combination of actions should the solutions architect take to ensure that the system can scale to meet demand? (Choose two.)

A. Use AWS Auto Scaling to adjust the ALB capacity based on request rate.

E. Use scheduled scaling to change the Auto Scaling group minimum, maximum, and desired capacity to zero for weekends. Revert to the default values at the start of the week.

This allows the ALB to automatically scale its capacity based on the incoming request rate, ensuring that the system can handle varying traffic loads.

This allows you to save costs and resources during weekends when the system is not required to operate. Scaling down the Auto Scaling group to zero instances during weekends and reverting to the default values at the start of the week ensures that you only incur costs when the system is actively in use.

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406] A solutions architect is designing a two-tiered architecture that includes a public subnet and a database subnet. The web servers in the public subnet must be open to the internet on port 443. The Amazon RDS for MySQL DB instance in the database subnet must be accessible only to the web servers on port 3306.

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

C. Create a security group for the web servers in the public subnet. Add a rule to allow traffic from 0.0.0.0/0 on port 443.

D. Create a security group for the DB instance. Add a rule to allow traffic from the web servers’ security group on port 3306.

This allows inbound traffic from the internet on port 443 to the web servers.

This ensures that the RDS instance is accessible only from the web servers in the public subnet.

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407] A company is implementing a shared storage solution for a gaming application that is hosted in the AWS Cloud. The company needs the ability to use Lustre clients to access data. The solution must be fully managed.

Which solution meets these requirements?

D. Create an Amazon FSx for Lustre file system. Attach the file system to the origin server. Connect the application server to the file system.

Amazon FSx for Lustre: Amazon FSx for Lustre is a fully managed service that provides high-performance shared storage. It is specifically designed to be used with Lustre, making it a suitable solution for Lustre clients.

Fully Managed: Amazon FSx for Lustre is a fully managed service, meaning that AWS takes care of maintenance, updates, and other operational tasks, reducing the management overhead for the company.

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408] A company runs an application that receives data from thousands of geographically dispersed remote devices that use UDP. The application processes the data immediately and sends a message back to the device if necessary. No data is stored.

The company needs a solution that minimizes latency for the data transmission from the devices. The solution also must provide rapid failover to another AWS Region.

Which solution will meet these requirements?

B. Use AWS Global Accelerator. Create a Network Load Balancer (NLB) in each of the two Regions as an endpoint. Create an Amazon Elastic Container Service (Amazon ECS) cluster with the Fargate launch type. Create an ECS service on the cluster. Set the ECS service as the target for the NLProcess the data in Amazon ECS.

AWS Global Accelerator: AWS Global Accelerator provides static IP addresses that act as a fixed entry point to your application. It routes traffic over the AWS global network to the optimal AWS endpoint based on health, geography, and routing policies.

Network Load Balancer (NLB): NLB is well-suited for UDP-based traffic, and it's designed for high-performance, low-latency applications. In this case, it can efficiently handle the thousands of geographically dispersed remote devices sending UDP traffic.

Amazon ECS with Fargate Launch Type: Using ECS with Fargate allows you to deploy and run containers without managing the underlying infrastructure. This setup can efficiently handle the immediate processing of data without the need to manage the underlying servers.

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409] A solutions architect must migrate a Windows Internet Information Services (IIS) web application to AWS. The application currently relies on a file share hosted in the user's on-premises network-attached storage (NAS). The solutions architect has proposed migrating the IIS web servers to Amazon EC2 instances in multiple Availability Zones that are connected to the storage solution, and configuring an Elastic Load Balancer attached to the instances.

Which replacement to the on-premises file share is MOST resilient and durable?

C. Migrate the file share to Amazon FSx for Windows File Server.

Amazon FSx for Windows File Server: Amazon FSx is a fully managed file storage service that is compatible with Windows file systems. Amazon FSx for Windows File Server is specifically designed for Windows workloads, including IIS web applications. It provides a highly available and durable file system that can be accessed by multiple EC2 instances in different Availability Zones.

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410] A company is deploying a new application on Amazon EC2 instances. The application writes data to Amazon Elastic Block Store (Amazon EBS) volumes. The company needs to ensure that all data that is written to the EBS volumes is encrypted at rest.

Which solution will meet this requirement?

B. Create the EBS volumes as encrypted volumes. Attach the EBS volumes to the EC2 instances.

By creating the EBS volumes as encrypted volumes, you ensure that all data written to those volumes is automatically encrypted. This provides a straightforward and effective solution for meeting the encryption-at-rest requirement.

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411] A company has a web application with sporadic usage patterns. There is heavy usage at the beginning of each month, moderate usage at the start of each week, and unpredictable usage during the week. The application consists of a web server and a MySQL database server running inside the data center. The company would like to move the application to the AWS Cloud, and needs to select a cost-effective database platform that will not require database modifications.

Which solution will meet these requirements?

C. MySQL-compatible Amazon Aurora Serverless

Aurora Serverless is a serverless option for MySQL-compatible databases.

It automatically adjusts the database capacity based on actual usage, making it suitable for sporadic usage patterns.

It is MySQL-compatible, so it won't require significant database modifications.

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412] An image-hosting company stores its objects in Amazon S3 buckets. The company wants to avoid accidental exposure of the objects in the S3 buckets to the public. All S3 objects in the entire AWS account need to remain private.

Which solution will meet these requirements?

D. Use the S3 Block Public Access feature on the account level. Use AWS Organizations to create a service control policy (SCP) that prevents IAM users from changing the setting. Apply the SCP to the account.

AWS Organizations allows you to create service control policies (SCPs) that set fine-grained permissions for member accounts. In this case, you can create an SCP that prevents IAM users from changing the S3 Block Public Access settings. Applying this SCP to the account ensures that the configured public access settings remain in place and cannot be altered by IAM users.

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413] An ecommerce company is experiencing an increase in user traffic. The company’s store is deployed on Amazon EC2 instances as a two-tier web application consisting of a web tier and a separate database tier. As traffic increases, the company notices that the architecture is causing significant delays in sending timely marketing and order confirmation email to users. The company wants to reduce the time it spends resolving complex email delivery issues and minimize operational overhead.

What should a solutions architect do to meet these requirements?

B. Configure the web instance to send email through Amazon Simple Email Service (Amazon SES).

Amazon Simple Email Service (Amazon SES) is a fully managed email sending service. By configuring the web instances to send emails through Amazon SES, the ecommerce company can offload the complexity of email delivery to a reliable and scalable service.

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414] A company has a business system that generates hundreds of reports each day. The business system saves the reports to a network share in CSV format. The company needs to store this data in the AWS Cloud in near-real time for analysis.

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

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415] A company is storing petabytes of data in Amazon S3 Standard. The data is stored in multiple S3 buckets and is accessed with varying frequency. The company does not know access patterns for all the data. The company needs to implement a solution for each S3 bucket to optimize the cost of S3 usage.

Which solution will meet these requirements with the MOST operational efficiency?

A. Create an S3 Lifecycle configuration with a rule to transition the objects in the S3 bucket to S3 Intelligent-Tiering.

S3 Intelligent-Tiering: This storage class is designed to automatically and dynamically move objects between two access tiers – frequent and infrequent access – based on changing access patterns. It is a good fit for data with unknown or changing access patterns. It provides cost savings compared to S3 Standard while maintaining low-latency access to frequently accessed objects.

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416] A rapidly growing global ecommerce company is hosting its web application on AWS. The web application includes static content and dynamic content. The website stores online transaction processing (OLTP) data in an Amazon RDS database The website’s users are experiencing slow page loads.

Which combination of actions should a solutions architect take to resolve this issue? (Choose two.)

B. Set up an Amazon CloudFront distribution.

D. Create a read replica for the RDS DB instance.

Amazon CloudFront is a content delivery network (CDN) that can improve the performance of a website by caching static content closer to the users. This reduces latency and improves page load times.

Configure CloudFront to distribute static content such as images, stylesheets, and JavaScript files. This will offload the serving of static assets from the web servers, improving overall website performance.

Creating a read replica for the Amazon RDS database allows you to offload read traffic from the primary database, improving the overall database performance.

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417] A company uses Amazon EC2 instances and AWS Lambda functions to run its application. The company has VPCs with public subnets and private subnets in its AWS account. The EC2 instances run in a private subnet in one of the VPCs. The Lambda functions need direct network access to the EC2 instances for the application to work.

The application will run for at least 1 year. The company expects the number of Lambda functions that the application uses to increase during that time. The company wants to maximize its savings on all application resources and to keep network latency between the services low.

Which solution will meet these requirements?

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418] A solutions architect needs to allow team members to access Amazon S3 buckets in two different AWS accounts: a development account and a production account. The team currently has access to S3 buckets in the development account by using unique IAM users that are assigned to an IAM group that has appropriate permissions in the account.

The solutions architect has created an IAM role in the production account. The role has a policy that grants access to an S3 bucket in the production account.

Which solution will meet these requirements while complying with the principle of least privilege?

B. Add the development account as a principal in the trust policy of the role in the production account.

By adding the development account as a principal in the trust policy of the IAM role in the production account, you enable IAM users in the development account to assume the role and gain temporary permissions to access the S3 bucket in the production account.

This approach follows the principle of least privilege because it allows users in the development account to access only the specific resources (S3 bucket) defined in the trust policy of the IAM role.

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419] A company uses AWS Organizations with all features enabled and runs multiple Amazon EC2 workloads in the ap-southeast-2 Region. The company has a service control policy (SCP) that prevents any resources from being created in any other Region. A security policy requires the company to encrypt all data at rest.

An audit discovers that employees have created Amazon Elastic Block Store (Amazon EBS) volumes for EC2 instances without encrypting the volumes. The company wants any new EC2 instances that any IAM user or root user launches in ap-southeast-2 to use encrypted EBS volumes. The company wants a solution that will have minimal effect on employees who create EBS volumes.

Which combination of steps will meet these requirements? (Choose two.)

C. Create an SCP. Attach the SCP to the root organizational unit (OU). Define the SCP to deny the ec2:CreateVolume action whenthe ec2:Encrypted condition equals false.

E. In the Organizations management account, specify the Default EBS volume encryption setting.

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420] A company wants to use an Amazon RDS for PostgreSQL DB cluster to simplify time-consuming database administrative tasks for production database workloads. The company wants to ensure that its database is highly available and will provide automatic failover support in most scenarios in less than 40 seconds. The company wants to offload reads off of the primary instance and keep costs as low as possible.

Which solution will meet these requirements?

D. Use an Amazon RDS Multi-AZ DB cluster deployment Point the read workload to the reader endpoint.

Amazon RDS Multi-AZ DB Cluster Deployment: This provides high availability by automatically replicating data to a standby instance in a different Availability Zone. In case of a failure, Amazon RDS automatically fails over to the standby instance.

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421] A company runs a highly available SFTP service. The SFTP service uses two Amazon EC2 Linux instances that run with elastic IP addresses to accept traffic from trusted IP sources on the internet. The SFTP service is backed by shared storage that is attached to the instances. User accounts are created and managed as Linux users in the SFTP servers.

The company wants a serverless option that provides high IOPS performance and highly configurable security. The company also wants to maintain control over user permissions.

Which solution will meet these requirements?

B. Create an encrypted Amazon Elastic File System (Amazon EFS) volume. Create an AWS Transfer Family SFTP service with elastic IP addresses and a VPC endpoint that has internet-facing access. Attach a security group to the endpoint that allows only trusted IP addresses. Attach the EFS volume to the SFTP service endpoint. Grant users access to the SFTP service.

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422] A company is developing a new machine learning (ML) model solution on AWS. The models are developed as independent microservices that fetch approximately 1 GB of model data from Amazon S3 at startup and load the data into memory. Users access the models through an asynchronous API. Users can send a request or a batch of requests and specify where the results should be sent.

The company provides models to hundreds of users. The usage patterns for the models are irregular. Some models could be unused for days or weeks. Other models could receive batches of thousands of requests at a time.

Which design should a solutions architect recommend to meet these requirements?

D. Direct the requests from the API into an Amazon Simple Queue Service (Amazon SQS) queue. Deploy the models as Amazon Elastic Container Service (Amazon ECS) services that read from the queue. Enable AWS Auto Scaling on Amazon ECS for both the cluster and copies of the service based on the queue size.

Amazon ECS Services: Deploying the models as Amazon ECS services allows for flexibility in managing the containerized applications. ECS services can efficiently handle the startup process of fetching model data from Amazon S3 and loading it into memory.

Application Load Balancer (ALB): The ALB is used to direct requests from the API to the ECS services. ALB provides advanced routing capabilities and can handle the asynchronous API requirements.

AWS App Mesh: AWS App Mesh can be used to scale the instances of the ECS cluster based on the SQS queue size. This allows for dynamic scaling based on demand, helping to efficiently use resources.

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424] A company is running a custom application on Amazon EC2 On-Demand Instances. The application has frontend nodes that need to run 24 hours a day, 7 days a week and backend nodes that need to run only for a short time based on workload. The number of backend nodes varies during the day.

The company needs to scale out and scale in more instances based on workload.

Which solution will meet these requirements MOST cost-effectively?

B. Use Reserved Instances for the frontend nodes. Use Spot Instances for the backend nodes.

Reserved Instances (RIs) for Frontend Nodes: Since the frontend nodes need to run 24/7, Reserved Instances provide a significant cost savings compared to On-Demand pricing. RIs are a commitment to a consistent usage pattern, making them suitable for instances that need to run continuously.

Spot Instances for Backend Nodes: Spot Instances are a cost-effective option for workloads that can be interrupted or are flexible regarding availability. As the number of backend nodes varies during the day, using Spot Instances allows you to take advantage of spare capacity at a lower cost. Spot Instances are suitable for short-lived, scalable, and flexible workloads.

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425] A company uses high block storage capacity to runs its workloads on premises. The company's daily peak input and output transactions per second are not more than 15,000 IOPS. The company wants to migrate the workloads to Amazon EC2 and to provision disk performance independent of storage capacity.

Which Amazon Elastic Block Store (Amazon EBS) volume type will meet these requirements MOST cost-effectively?

C. GP3 volume type

General Purpose SSD (gp3) volumes are designed to provide a balance of price and performance. They allow you to provision IOPS independently of storage capacity, making them suitable for workloads with varying performance requirements. GP3 volumes offer a lower price per IOPS compared to io1 volumes and are a good fit for general-purpose workloads.

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426] A company needs to store data from its healthcare application. The application’s data frequently changes. A new regulation requires audit access at all levels of the stored data.

The company hosts the application on an on-premises infrastructure that is running out of storage capacity. A solutions architect must securely migrate the existing data to AWS while satisfying the new regulation.

Which solution will meet these requirements?

D. Use AWS Storage Gateway to move the existing data to Amazon S3. Use AWS CloudTrail to log management events.

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427] A solutions architect is implementing a complex Java application with a MySQL database. The Java application must be deployed on Apache Tomcat and must be highly available.

What should the solutions architect do to meet these requirements?

B. Deploy the application by using AWS Elastic Beanstalk. Configure a load-balanced environment and a rolling deployment policy.

AWS Elastic Beanstalk: It is a fully managed service that simplifies the deployment and operation of applications, including web applications running Apache Tomcat. Elastic Beanstalk handles the deployment details, capacity provisioning, load balancing, auto-scaling, and application health monitoring, making it easier to deploy and manage your applications.

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428] A serverless application uses Amazon API Gateway, AWS Lambda, and Amazon DynamoDB. The Lambda function needs permissions to read and write to the DynamoDB table.

Which solution will give the Lambda function access to the DynamoDB table MOST securely?

B. Create an IAM role that includes Lambda as a trusted service. Attach a policy to the role that allows read and write access to the DynamoDB table. Update the configuration of the Lambda function to use the new role as the execution role.

IAM Role with Lambda as a Trusted Service: This approach follows the principle of least privilege. You create an IAM role that specifically grants the required permissions to access DynamoDB and makes Lambda a trusted service. This ensures that only Lambda functions associated with this role can assume it.

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429] Json format

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430] A manufacturing company has machine sensors that upload .csv files to an Amazon S3 bucket. These .csv files must be converted into images and must be made available as soon as possible for the automatic generation of graphical reports.

The images become irrelevant after 1 month, but the .csv files must be kept to train machine learning (ML) models twice a year. The ML trainings and audits are planned weeks in advance.

Which combination of steps will meet these requirements MOST cost-effectively? (Choose two.)

B. Design an AWS Lambda function that converts the .csv files into images and stores the images in the S3 bucket. Invoke the Lambda function when a .csv file is uploaded. Most Voted

C. Create S3 Lifecycle rules for .csv files and image files in the S3 bucket. Transition the .csv files from S3 Standard to S3 Glacier 1 day after they are uploaded. Expire the image files after 30 days.

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431] A company has developed a new video game as a web application. The application is in a three-tier architecture in a VPC with Amazon RDS for MySQL in the database layer. Several players will compete concurrently online. The game’s developers want to display a top-10 scoreboard in near-real time and offer the ability to stop and restore the game while preserving the current scores.

What should a solutions architect do to meet these requirements?

B. Set up an Amazon ElastiCache for Redis cluster to compute and cache the scores for the web application to display.

Redis is an in-memory data store that is well-suited for caching and real-time data processing. By setting up an ElastiCache for Redis cluster, you can compute and cache the scores in-memory, allowing for fast retrieval and updates.

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432] An ecommerce company wants to use machine learning (ML) algorithms to build and train models. The company will use the models to visualize complex scenarios and to detect trends in customer data. The architecture team wants to integrate its ML models with a reporting platform to analyze the augmented data and use the data directly in its business intelligence dashboards.

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

B. Use Amazon SageMaker to build and train models. Use Amazon QuickSight to visualize the data.

Amazon SageMaker: It is a fully managed service for building, training, and deploying machine learning models. SageMaker simplifies the ML workflow and reduces operational overhead. It provides a fully managed Jupyter Notebook instance for model development and training, and it can seamlessly integrate with other AWS services.

QuickSight can directly connect to Amazon SageMaker models and use the results for visualization without the need for extensive data movement or transformation.

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433] A company is running its production and nonproduction environment workloads in multiple AWS accounts. The accounts are in an organization in AWS Organizations. The company needs to design a solution that will prevent the modification of cost usage tags.

Which solution will meet these requirements?

C. Create a service control policy (SCP) to prevent tag modification except by authorized principals.

SCPs in AWS Organizations are used to set fine-grained permissions on what actions AWS accounts within the organization can perform. You can create a custom SCP to specifically control access to tag modification.

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434] A company hosts its application in the AWS Cloud. The application runs on Amazon EC2 instances behind an Elastic Load Balancer in an Auto Scaling group and with an Amazon DynamoDB table. The company wants to ensure the application can be made available in anotherAWS Region with minimal downtime.

What should a solutions architect do to meet these requirements with the LEAST amount of downtime?

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435] A company needs to migrate a MySQL database from its on-premises data center to AWS within 2 weeks. The database is 20 TB in size. The company wants to complete the migration with minimal downtime.

Which solution will migrate the database MOST cost-effectively?

A. Order an AWS Snowball Edge Storage Optimized device. Use AWS Database Migration Service (AWS DMS) with AWS Schema Conversion Tool (AWS SCT) to migrate the database with replication of ongoing changes. Send the Snowball Edge device to AWS to finish the migration and continue the ongoing replication.

This is a cost-effective solution for shipping large amounts of data to AWS. Snowball Edge devices are designed for efficient data transfer, and they can handle the 20 TB database.

AWS DMS is a managed service for migrating databases to AWS, and AWS SCT can assist in converting the database schema. Using these tools in combination allows for a smooth migration process.

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436] A company moved its on-premises PostgreSQL database to an Amazon RDS for PostgreSQL DB instance. The company successfully launched a new product. The workload on the database has increased. The company wants to accommodate the larger workload without adding infrastructure.

Which solution will meet these requirements MOST cost-effectively?

A. Buy reserved DB instances for the total workload. Make the Amazon RDS for PostgreSQL DB instance larger.

When you commit to using a database instance for a longer time (with reserved instances), AWS gives you a discount compared to paying on a month-to-month basis.

Imagine you have a computer, and you want to make it more powerful because you have more things to do on it. Making the instance larger means upgrading the power of your virtual computer.

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437] A company operates an ecommerce website on Amazon EC2 instances behind an Application Load Balancer (ALB) in an Auto Scaling group. The site is experiencing performance issues related to a high request rate from illegitimate external systems with changing IP addresses. The security team is worried about potential DDoS attacks against the website. The company must block the illegitimate incoming requests in a way that has a minimal impact on legitimate users.

What should a solutions architect recommend?

B. Deploy AWS WAF, associate it with the ALB, and configure a rate-limiting rule.

AWS WAF is a web application firewall service that helps protect your web applications from common web exploits. It allows you to create rules to filter and monitor HTTP and HTTPS traffic based on conditions that you define.

By associating AWS WAF with the ALB, you can inspect and filter incoming traffic before it reaches your instances, providing a layer of protection against DDoS attacks and other malicious activities.

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438] A company wants to share accounting data with an external auditor. The data is stored in an Amazon RDS DB instance that resides in a private subnet. The auditor has its own AWS account and requires its own copy of the database.

What is the MOST secure way for the company to share the database with the auditor?

D. Create an encrypted snapshot of the database. Share the snapshot with the auditor. Allow access to the AWS Key Management Service (AWS KMS) encryption key.

Creating an encrypted snapshot ensures that the database data is protected during the transfer and storage process.

Sharing the encrypted snapshot with the auditor allows them to create their own copy of the database securely.

By allowing access to the AWS KMS encryption key, the auditor can decrypt the snapshot and restore it to their own environment.

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439] A solutions architect configured a VPC that has a small range of IP addresses. The number of Amazon EC2 instances that are in the VPC is increasing, and there is an insufficient number of IP addresses for future workloads.

Which solution resolves this issue with the LEAST operational overhead?

A. Add an additional IPv4 CIDR block to increase the number of IP addresses and create additional subnets in the VPC. Create new resources in the new subnets by using the new CIDR.

By adding an additional IPv4 CIDR block to the existing VPC, you can effectively increase the number of available IP addresses within the same VPC.

Creating additional subnets using the new CIDR block allows you to organize your resources and maintain segmentation within the VPC.

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440] A company used an Amazon RDS for MySQL DB instance during application testing. Before terminating the DB instance at the end of the test cycle, a solutions architect created two backups. The solutions architect created the first backup by using the mysqldump utility to create a database dump. The solutions architect created the second backup by enabling the final DB snapshot option on RDS termination.

The company is now planning for a new test cycle and wants to create a new DB instance from the most recent backup. The company has chosen a MySQL-compatible edition ofAmazon Aurora to host the DB instance.

Which solutions will create the new DB instance? (Choose two.)

A. Import the RDS snapshot directly into Aurora.

C. Upload the database dump to Amazon S3. Then import the database dump into Aurora.

A. Amazon Aurora allows you to directly import an Amazon RDS snapshot into Aurora. This is a straightforward process for migrating data from RDS to Aurora.

C. Uploading the database dump to Amazon S3 and then importing the database dump into Aurora is a common method. You can use the MySQL-compatible version of Aurora to restore the data from a database dump stored in Amazon S3.

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441] A company hosts a multi-tier web application on Amazon Linux Amazon EC2 instances behind an Application Load Balancer. The instances run in an Auto Scaling group across multiple Availability Zones. The company observes that the Auto Scaling group launches more On-Demand Instances when the application's end users access high volumes of static web content. The company wants to optimize cost.

What should a solutions architect do to redesign the application MOST cost-effectively?

C. Create an Amazon CloudFront distribution to host the static web contents from an Amazon S3 bucket.

Amazon CloudFront is a content delivery network (CDN) service that delivers static and dynamic web content, including images, videos, CSS, and JavaScript, with low latency and high transfer speeds. It can be used to cache and distribute static content globally, reducing the load on your web servers.

By creating a CloudFront distribution and hosting static web content in an Amazon S3 bucket, you offload the serving of static content to the CDN, which can significantly reduce the load on your EC2 instances.

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442] A company stores several petabytes of data across multiple AWS accounts. The company uses AWS Lake Formation to manage its data lake. The company's data science team wants to securely share selective data from its accounts with the company's engineering team for analytical purposes.

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

D. Use Lake Formation tag-based access control to authorize and grant cross-account permissions for the required data to the engineering team accounts.

Lake Formation allows you to use tag-based access control to authorize and grant permissions for data in the data lake. You can apply tags to databases and tables, and then use those tags to control access to the data.

By applying tags to the relevant data and using tag-based access control, you can easily manage access to specific data sets without having to create additional IAM roles or copy data to a common account.

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443] A company wants to host a scalable web application on AWS. The application will be accessed by users from different geographic regions of the world. Application users will be able to download and upload unique data up to gigabytes in size. The development team wants a cost-effective solution to minimize upload and download latency and maximize performance.

What should a solutions architect do to accomplish this?

A. Use Amazon S3 with Transfer Acceleration to host the application.

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444] A company has hired a solutions architect to design a reliable architecture for its application. The application consists of one Amazon RDS DB instance and two manually provisioned Amazon EC2 instances that run web servers. The EC2 instances are located in a single Availability Zone.

An employee recently deleted the DB instance, and the application was unavailable for 24 hours as a result. The company is concerned with the overall reliability of its environment.

What should the solutions architect do to maximize reliability of the application's infrastructure?

B. Update the DB instance to be Multi-AZ, and enable deletion protection. Place the EC2 instances behind an Application Load Balancer, and run them in an EC2 Auto Scaling group across multiple Availability Zones.

Multi-AZ RDS Instance: By updating the DB instance to be Multi-AZ, you ensure that there is a standby replica in a different Availability Zone, providing high availability and automatic failover in case of a failure in the primary zone.

Deletion Protection: Enabling deletion protection for the DB instance helps prevent accidental deletion, reducing the risk of downtime caused by human error.

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445] A company is storing 700 terabytes of data on a large network-attached storage (NAS) system in its corporate data center. The company has a hybrid environment with a 10 Gbps AWS Direct Connect connection.

After an audit from a regulator, the company has 90 days to move the data to the cloud. The company needs to move the data efficiently and without disruption. The company still needs to be able to access and update the data during the transfer window.

Which solution will meet these requirements?

A. Create an AWS DataSync agent in the corporate data center. Create a data transfer task Start the transfer to an Amazon S3 bucket.

using AWS DataSync, which is designed for efficiently transferring large amounts of data between on-premises storage and Amazon S3. It allows you to create data transfer tasks and initiate the transfer to an Amazon S3 bucket.

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446] A company stores data in PDF format in an Amazon S3 bucket. The company must follow a legal requirement to retain all new and existing data in Amazon S3 for 7 years.

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

D. Turn on S3 Object Lock with compliance retention mode for the S3 bucket. Set the retention period to expire after 7 years. Use S3 Batch Operations to bring the existing data into compliance.

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447] A company has a stateless web application that runs on AWS Lambda functions that are invoked by Amazon API Gateway. The company wants to deploy the application across multiple AWS Regions to provide Regional failover capabilities.

What should a solutions architect do to route traffic to multiple Regions?

A. Create Amazon Route 53 health checks for each Region. Use an active-active failover configuration.

By creating Amazon Route 53 health checks for each Region and configuring an active-active failover configuration, Route 53 can monitor the health of the endpoints in each Region and route traffic to healthy endpoints. In the event of a failure in one Region, Route 53 automatically routes traffic to the healthy endpoints in other Regions.

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448] A company has two VPCs named Management and Production. The Management VPC uses VPNs through a customer gateway to connect to a single device in the data center. The Production VPC uses a virtual private gateway with two attached AWS Direct Connect connections. The Management and Production VPCs both use a single VPC peering connection to allow communication between the applications.

What should a solutions architect do to mitigate any single point of failure in this architecture?

C. Add a second set of VPNs to the Management VPC from a second customer gateway device.

Adding a second set of VPN connections from the Management VPC to a second customer gateway device provides redundancy and eliminates this single point of failure.

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449] A company runs its application on an Oracle database. The company plans to quickly migrate to AWS because of limited resources for the database, backup administration, and data center maintenance. The application uses third-party database features that require privileged access.

Which solution will help the company migrate the database to AWS MOST cost-effectively?

B. Migrate the database to Amazon RDS Custom for Oracle. Customize the database settings to support third-party features.

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450] A company has a three-tier web application that is in a single server. The company wants to migrate the application to the AWS Cloud. The company also wants the application to align with the AWS Well-Architected Framework and to be consistent with AWS recommended best practices for security, scalability, and resiliency.

Which combination of solutions will meet these requirements? (Choose three.)

C. Create a VPC across two Availability Zones. Refactor the application to host the web tier, application tier, and database tier. Host each tier on its own private subnet with Auto Scaling groups for the web tier and application tier.

This choice aligns with best practices by using separate subnets for each tier, allowing for better security and scalability. Auto Scaling groups provide elasticity and resiliency.

E. Use Elastic Load Balancers in front of the web tier. Control access by using security groups containing references to each layer's security groups.

This option introduces an Elastic Load Balancer (ELB) for the web tier, which enhances scalability and resiliency. Using security groups to control access adds an additional layer of security.

F. Use an Amazon RDS database Multi-AZ cluster deployment in private subnets. Allow database access only from application tier security groups.

This option leverages Amazon RDS for the database tier, utilizing Multi-AZ for high availability. Placing the RDS database in private subnets and restricting access to the application tier security groups enhances security.

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451] A company is migrating its applications and databases to the AWS Cloud. The company will use Amazon Elastic Container Service (Amazon ECS), AWS Direct Connect, and Amazon RDS.

Which activities will be managed by the company's operational team? (Choose three.)

C. Configuration of additional software components on Amazon ECS for monitoring, patch management, log management, and host intrusion detection:

The company's operational team is responsible for configuring additional software components on Amazon ECS, such as monitoring tools, patch management tools, log management systems, and host intrusion detection systems. These components are often specific to the company's requirements and policies.

B. Creation of an Amazon RDS DB instance and configuring the scheduled maintenance window:

The operational team is responsible for creating Amazon RDS DB instances, configuring parameters, and setting up maintenance windows based on the company's operational needs. This includes decisions about the size and type of the RDS instance, storage configuration, and other relevant settings.

F. Encryption of the data that moves in transit through Direct Connect:

While AWS manages the physical infrastructure of Direct Connect, the company's operational team is responsible for configuring encryption for the data in transit over Direct Connect. This includes implementing encryption protocols and ensuring the security of data while it travels between the on-premises data center and AWS.

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452] A company runs a Java-based job on an Amazon EC2 instance. The job runs every hour and takes 10 seconds to run. The job runs on a scheduled interval and consumes 1 GB of memory. The CPU utilization of the instance is low except for short surges during which the job uses the maximum CPU available. The company wants to optimize the costs to run the job.

Which solution will meet these requirements?

B. Copy the code into an AWS Lambda function that has 1 GB of memory. Create an Amazon EventBridge scheduled rule to run the code each hour.

AWS Lambda is a serverless compute service that allows you to run code without provisioning or managing servers. It automatically scales based on the number of requests, making it cost-effective for sporadic workloads.

Scheduled Rule with Amazon EventBridge:

Amazon EventBridge allows you to schedule events at specified intervals. By creating a scheduled rule, you can trigger the Lambda function to run the Java-based job every hour.

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453] A company wants to implement a backup strategy for Amazon EC2 data and multiple Amazon S3 buckets. Because of regulatory requirements, the company must retain backup files for a specific time period. The company must not alter the files for the duration of the retention period.

Which solution will meet these requirements?

D. Use AWS Backup to create a backup vault that has a vault lock in compliance mode. Create the required backup plan.

AWS Backup provides a centralized solution for managing backups across various AWS services, including Amazon EC2. By creating a backup vault with a vault lock in compliance mode, the company ensures that the backup files are retained and cannot be altered for the duration of the retention period. Compliance mode is designed to meet regulatory requirements for data retention.

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454] A company has resources across multiple AWS Regions and accounts. A newly hired solutions architect discovers a previous employee did not provide details about the resources inventory. The solutions architect needs to build and map the relationship details of the various workloads across all accounts.

Which solution will meet these requirements in the MOST operationally efficient way?

C. Use Workload Discovery on AWS to generate architecture diagrams of the workloads.

AWS has a service called AWS Well-Architected Tool, which includes Workload Discovery. Workload Discovery automatically discovers and visualizes the architecture of your workloads. It provides architecture diagrams, best practice recommendations, and insights into your workloads.

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455] A company uses AWS Organizations. The company wants to operate some of its AWS accounts with different budgets. The company wants to receive alerts and automatically prevent provisioning of additional resources on AWS accounts when the allocated budget threshold is met during a specific period.

Which combination of solutions will meet these requirements? (Choose three.)

B. Use AWS Budgets to create a budget. Set the budget amount under the Billing dashboards of the required AWS accounts.

D. Create an IAM role for AWS Budgets to run budget actions with the required permissions.

F. Add an alert to notify the company when each account meets its budget threshold. Add a budget action that selects the IAM identity created with the appropriate service control policy (SCP) to prevent provisioning of additional resources.

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456] A company runs applications on Amazon EC2 instances in one AWS Region. The company wants to back up the EC2 instances to a second Region. The company also wants to provision EC2 resources in the second Region and manage the EC2 instances centrally from one AWS account.

Which solution will meet these requirements MOST cost-effectively?

C. Create a backup plan by using AWS Backup. Configure cross-Region backup to the second Region for the EC2 instances.

AWS Backup is a centralized backup service that allows you to create backup plans for various AWS resources, including EC2 instances. With AWS Backup, you can configure cross-Region backups, meaning you can replicate backups from one AWS Region to another. This provides a cost-effective and centralized solution for backup.

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457] A company that uses AWS is building an application to transfer data to a product manufacturer. The company has its own identity provider (IdP). The company wants the IdP to authenticate application users while the users use the application to transfer data. The company must use Applicability Statement 2 (AS2) protocol.

Which solution will meet these requirements?

C. Use AWS Transfer Family to transfer the data. Create an AWS Lambda function for IdP authentication.

AWS Transfer Family (Option C): AWS Transfer Family is a fully managed service that allows you to transfer files over the internet using a range of protocols, including AS2. You can integrate AWS Transfer Family with your IdP for user authentication. By using a Lambda function, you can customize the authentication process and integrate it with your own IdP.

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458] A solutions architect is designing a RESTAPI in Amazon API Gateway for a cash payback service. The application requires 1 GB of memory and 2 GB of storage for its computation resources. The application will require that the data is in a relational format.

Which additional combination ofAWS services will meet these requirements with the LEAST administrative effort? (Choose two.)

B. AWS Lambda

C. Amazon RDS

AWS Lambda is a serverless compute service that automatically scales based on the number of requests and executes your code without requiring you to provision or manage servers. It's event-driven, and you pay only for the compute time consumed. For a REST API, Lambda can be a low-administration solution compared to managing infrastructure directly.

Amazon RDS (Relational Database Service) is a fully managed relational database service that simplifies database administration tasks. It provides options for popular database engines like MySQL, PostgreSQL, Oracle, and Microsoft SQL Server. You can easily provision, scale, and manage a relational database without dealing with the underlying infrastructure.

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459] A company uses AWS Organizations to run workloads within multiple AWS accounts. A tagging policy adds department tags to AWS resources when the company creates tags.

An accounting team needs to determine spending on Amazon EC2 consumption. The accounting team must determine which departments are responsible for the costs regardless ofAWS account. The accounting team has access to AWS Cost Explorer for all AWS accounts within the organization and needs to access all reports from Cost Explorer.

Which solution meets these requirements in the MOST operationally efficient way?

A. From the Organizations management account billing console, activate a user-defined cost allocation tag named department. Create one cost report in Cost Explorer grouping by tag name, and filter by EC2.

While AWS provides AWS-defined tags, the use of a user-defined tag provides flexibility in terms of naming and tagging conventions. Activating the tag at the Organizations management account level ensures that the tag is applied to resources across all member accounts.

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460] A company wants to securely exchange data between its software as a service (SaaS) application Salesforce account and Amazon S3. The company must encrypt the data at rest by using AWS Key Management Service (AWS KMS) customer managed keys (CMKs). The company must also encrypt the data in transit. The company has enabled API access for the Salesforce account.

C. Create Amazon AppFlow flows to transfer the data securely from Salesforce to Amazon S3.

Amazon AppFlow is a fully managed integration service that allows you to securely transfer data between AWS services and SaaS applications like Salesforce. It supports data encryption both in transit and at rest. With AppFlow, you can configure the integration flow, including source (Salesforce) and destination (Amazon S3), and set up encryption options. It simplifies the data transfer process and can handle the encryption requirements without the need for custom development.

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461] A company is developing a mobile gaming app in a single AWS Region. The app runs on multiple Amazon EC2 instances in an Auto Scaling group. The company stores the app data in Amazon DynamoDB. The app communicates by using TCP traffic and UDP traffic between the users and the servers. The application will be used globally. The company wants to ensure the lowest possible latency for all users.

Which solution will meet these requirements?

B. Use AWS Global Accelerator to create an accelerator. Create a Network Load Balancer (NLB) behind an accelerator endpoint that uses Global Accelerator integration and listening on the TCP and UDP ports. Update the Auto Scaling group to register instances on the NLB.

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462] A company has an application that processes customer orders. The company hosts the application on an Amazon EC2 instance that saves the orders to an Amazon Aurora database. Occasionally when traffic is high the workload does not process orders fast enough.

What should a solutions architect do to write the orders reliably to the database as quickly as possible?

B. Write orders to an Amazon Simple Queue Service (Amazon SQS) queue. Use EC2 instances in an Auto Scaling group behind an Application Load Balancer to read from the SQS queue and process orders into the database.

Amazon SQS, which is a fully managed message queuing service. Writing orders to an SQS queue allows for decoupling the EC2 instances processing the orders from the application writing the orders. EC2 instances in an Auto Scaling group can then read from the SQS queue, ensuring that the processing scales with demand.

Using an Auto Scaling group ensures that you can dynamically adjust the number of EC2 instances based on the workload. This can help handle high traffic efficiently.

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463] An IoT company is releasing a mattress that has sensors to collect data about a user’s sleep. The sensors will send data to an Amazon S3 bucket. The sensors collect approximately 2 MB of data every night for each mattress. The company must process and summarize the data for each mattress. The results need to be available as soon as possible. Data processing will require 1 GB of memory and will finish within 30 seconds.

Which solution will meet these requirements MOST cost-effectively?

C. Use AWS Lambda with a Python script

AWS Lambda is a serverless compute service that allows you to run code without provisioning or managing servers. It automatically scales with the number of requests, making it well-suited for event-driven workloads like processing data from IoT devices.

Python is a lightweight and efficient language for data processing tasks.

Lambda allows you to execute code in response to events, such as data arriving in the S3 bucket.

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464] A company hosts an online shopping application that stores all orders in an Amazon RDS for PostgreSQL Single-AZ DB instance. Management wants to eliminate single points of failure and has asked a solutions architect to recommend an approach to minimize database downtime without requiring any changes to the application code.

Which solution meets these requirements?

A. Convert the existing database instance to a Multi-AZ deployment by modifying the database instance and specifying the Multi-AZ option.

By converting the existing RDS instance to a Multi-AZ deployment, you enable high availability with automatic failover. Amazon RDS will automatically replicate the database to a standby instance in a different Availability Zone (AZ). In the event of a failure, Amazon RDS will automatically promote the standby to the primary, minimizing downtime.

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465] A company is developing an application to support customer demands. The company wants to deploy the application on multiple Amazon EC2 Nitro-based instances within the same Availability Zone. The company also wants to give the application the ability to write to multiple block storage volumes in multiple EC2 Nitro-based instances simultaneously to achieve higher application availability.

Which solution will meet these requirements?

C. Use Provisioned IOPS SSD (io2) EBS volumes with Amazon Elastic Block Store (Amazon EBS) Multi-Attach

Provisioned IOPS SSD (io2) volumes do indeed support Multi-Attach, allowing you to attach a single volume to multiple Nitro-based instances in the same Availability Zone. This can be suitable for scenarios where multiple instances need simultaneous access to a shared volume with high performance.

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466] A company designed a stateless two-tier application that uses Amazon EC2 in a single Availability Zone and an Amazon RDS Multi-AZ DB instance. New company management wants to ensure the application is highly available.

What should a solutions architect do to meet this requirement?

A. Configure the application to use Multi-AZ EC2 Auto Scaling and create an Application Load Balancer

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467] A company uses AWS Organizations. A member account has purchased a Compute Savings Plan. Because of changes in the workloads inside the member account, the account no longer receives the full benefit of the Compute Savings Plan commitment. The company uses less than 50% of its purchased compute power.

B. Turn on discount sharing from the Billing Preferences section of the account console in the company's Organizations management account.

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468] A company is developing a microservices application that will provide a search catalog for customers. The company must use REST APIs to present the frontend of the application to users. The REST APIs must access the backend services that the company hosts in containers in private VPC subnets.

Which solution will meet these requirements?

B. Design a REST API by using Amazon API Gateway. Host the application in Amazon Elastic Container Service (Amazon ECS) in a private subnet. Create a private VPC link for API Gateway to access Amazon ECS.

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469] A company stores raw collected data in an Amazon S3 bucket. The data is used for several types of analytics on behalf of the company's customers. The type of analytics requested determines the access pattern on the S3 objects.

The company cannot predict or control the access pattern. The company wants to reduce its S3 costs.

Which solution will meet these requirements?

C. Use S3 Lifecycle rules to transition objects from S3 Standard to S3 Intelligent-Tiering

S3 Intelligent-Tiering is designed to optimize costs by automatically moving objects between two access tiers: frequent and infrequent access. It is well-suited for scenarios where access patterns are unpredictable.

Using S3 Lifecycle rules to transition objects to S3 Intelligent-Tiering allows you to take advantage of automatic cost savings based on actual access patterns without the need for manual adjustments.

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470] A company has applications hosted on Amazon EC2 instances with IPv6 addresses. The applications must initiate communications with other external applications using the internet. However the company’s security policy states that any external service cannot initiate a connection to the EC2 instances.

What should a solutions architect recommend to resolve this issue?

D. Create an egress-only internet gateway and make it the destination of the subnet's route table.

An egress-only internet gateway is used for IPv6 traffic leaving the VPC to reach the internet. It allows outbound communication initiated by resources inside the VPC but prevents incoming traffic initiated from the internet.

Configuring the subnet's route table to use the egress-only internet gateway as the destination ensures that IPv6 traffic initiated from EC2 instances can reach external services while blocking unsolicited incoming traffic.

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471] A company is creating an application that runs on containers in a VPC. The application stores and accesses data in an Amazon S3 bucket. During the development phase, the application will store and access 1 TB of data in Amazon S3 each day. The company wants to minimize costs and wants to prevent traffic from traversing the internet whenever possible.

Which solution will meet these requirements?

C. Create a gateway VPC endpoint for Amazon S3. Associate this endpoint with all route tables in the VPC.

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Gateway VPC Endpoint: A gateway VPC endpoint enables private connectivity between a VPC and Amazon S3. It allows direct access to Amazon S3 without the need for internet gateways, NAT devices, VPN connections, or AWS Direct Connect.

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472] A company has a mobile chat application with a data store based in Amazon DynamoDB. Users would like new messages to be read with as little latency as possible. A solutions architect needs to design an optimal solution that requires minimal application changes.

Which method should the solutions architect select?

A. Configure Amazon DynamoDB Accelerator (DAX) for the new messages table. Update the code to use the DAX endpoint.

Amazon DynamoDB Accelerator (DAX) is an in-memory caching service for DynamoDB that helps improve the read performance of DynamoDB tables.A company hosts a website on Amazon EC2 instances behind an Application Load Balancer (ALB). The website serves static content. Website traffic is increasing, and the company is concerned about a potential increase in cost.

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473] A company hosts a website on Amazon EC2 instances behind an Application Load Balancer (ALB). The website serves static content. Website traffic is increasing, and the company is concerned about a potential increase in cost.

A. Create an Amazon CloudFront distribution to cache state files at edge locations

By creating a CloudFront distribution and configuring it to cache static files, you can offload the delivery of static content to the CDN, reducing the load on the ALB and potentially lowering data transfer costs.

CloudFront helps improve website performance and can be cost-effective due to its caching mechanism.

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474] A company has multiple VPCs across AWS Regions to support and run workloads that are isolated from workloads in other Regions. Because of a recent application launch requirement, the company’s VPCs must communicate with all other VPCs across all Regions.

Which solution will meet these requirements with the LEAST amount of administrative effort?

C. Use AWS Transit Gateway to manage VPC communication in a single Region and Transit Gateway peering across Regions to manage VPC communications.

AWS Transit Gateway is designed for simplifying the connectivity between multiple VPCs and on-premises networks. It allows for hub-and-spoke connectivity patterns, making it easier to manage communication across multiple VPCs.

By using AWS Transit Gateway in a single Region to connect VPCs and enabling Transit Gateway peering across Regions, you can efficiently manage communication between VPCs in different Regions with centralized control and minimal administrative effort.

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475] A company is designing a containerized application that will use Amazon Elastic Container Service (Amazon ECS). The application needs to access a shared file system that is highly durable and can recover data to another AWS Region with a recovery point objective (RPO) of 8 hours. The file system needs to provide a mount target m each Availability Zone within a Region.

A solutions architect wants to use AWS Backup to manage the replication to another Region.

Which solution will meet these requirements?

C. Amazon Elastic File System (Amazon EFS) with the Standard storage class

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476] A company is expecting rapid growth in the near future. A solutions architect needs to configure existing users and grant permissions to new users on AWS. The solutions architect has decided to create IAM groups. The solutions architect will add the new users to IAM groups based on department.

Which additional action is the MOST secure way to grant permissions to the new users?

C. Create an IAM policy that grants least privilege permission. Attach the policy to the IAM groups

Creating an IAM policy that grants the least privilege required for the users' tasks is a security best practice. By attaching this policy to IAM groups, you ensure that new users added to these groups inherit the specific permissions defined in the policy.

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477] IAM

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478] A law firm needs to share information with the public. The information includes hundreds of files that must be publicly readable. Modifications or deletions of the files by anyone before a designated future date are prohibited.

Which solution will meet these requirements in the MOST secure way?

B. Create a new Amazon S3 bucket with S3 Versioning enabled. Use S3 Object Lock with a retention period in accordance with the designated date. Configure the S3 bucket for static website hosting. Set an S3 bucket policy to allow read-only access to the objects.

S3 Versioning helps maintain multiple versions of an object over time. With S3 Object Lock, you can enforce retention periods during which the objects cannot be modified or deleted. This aligns with the requirement to prohibit modifications or deletions before a designated future date.

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479] A company is making a prototype of the infrastructure for its new website by manually provisioning the necessary infrastructure. This infrastructure includes an Auto Scaling group, an Application Load Balancer and an Amazon RDS database. After the configuration has been thoroughly validated, the company wants the capability to immediately deploy the infrastructure for development and production use in two Availability Zones in an automated fashion.

What should a solutions architect recommend to meet these requirements?

B. Define the infrastructure as a template by using the prototype infrastructure as a guide. Deploy the infrastructure with AWS CloudFormation.

AWS CloudFormation is a service specifically designed for defining and deploying AWS infrastructure as code using templates. In this case, you can create a CloudFormation template based on the validated prototype infrastructure, and then use CloudFormation to deploy and manage the infrastructure in an automated and repeatable way.

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480] A business application is hosted on Amazon EC2 and uses Amazon S3 for encrypted object storage. The chief information security officer has directed that no application traffic between the two services should traverse the public internet.

Which capability should the solutions architect use to meet the compliance requirements?

B. VPC endpoint

AWS provides VPC endpoints that allow you to privately connect your VPC to supported AWS services, including Amazon S3, without needing to use public IP addresses or traverse the public internet.

With an S3 VPC endpoint, the traffic between your Amazon EC2 instances and Amazon S3 remains within the AWS network, providing a secure and private connection.

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481] A company hosts a three-tier web application in the AWS Cloud. A Multi-AZAmazon RDS for MySQL server forms the database layer Amazon ElastiCache forms the cache layer. The company wants a caching strategy that adds or updates data in the cache when a customer adds an item to the database. The data in the cache must always match the data in the database.

Which solution will meet these requirements?

B. Implement the write-through caching strategy

In a write-through caching strategy, data is always written or updated in the cache when it is modified in the database. This ensures that the cache is consistently updated with the latest data from the database.

When a customer adds an item to the database, the write-through caching strategy ensures that the item is also added or updated in the cache.

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482] A company wants to migrate 100 GB of historical data from an on-premises location to an Amazon S3 bucket. The company has a 100 megabits per second (Mbps) internet connection on premises. The company needs to encrypt the data in transit to the S3 bucket. The company will store new data directly in Amazon S3.

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

B. Use AWS DataSync to migrate the data from the on-premises location to an S3 bucket

AWS DataSync is a service designed for efficiently transferring large amounts of data between on-premises storage systems and Amazon S3.

It supports encryption of data in transit, ensuring the security of the data during the migration process.

AWS DataSync is specifically built for data transfer scenarios and minimizes operational overhead, providing an efficient and straightforward solution.

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483] A company containerized a Windows job that runs on .NET 6 Framework under a Windows container. The company wants to run this job in the AWS Cloud. The job runs every 10 minutes. The job’s runtime varies between 1 minute and 3 minutes.

Which solution will meet these requirements MOST cost-effectively?

C. Use Amazon Elastic Container Service (Amazon ECS) on AWS Fargate to run the job. Create a scheduled task based on the container image of the job to run every 10 minutes.

Amazon ECS is a fully managed container orchestration service, and AWS Fargate allows you to run containers without managing the underlying infrastructure.

ECS on Fargate is a serverless option, which means you only pay for the vCPU and memory that you use, and it scales automatically to meet the needs of the job.

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484] A company wants to move from many standalone AWS accounts to a consolidated, multi-account architecture. The company plans to create many new AWS accounts for different business units. The company needs to authenticate access to these AWS accounts by using a centralized corporate directory service.

Which combination of actions should a solutions architect recommend to meet these requirements? (Choose two.)

A. Create a new organization in AWS Organizations with all features turned on. Create the new AWS accounts in the organization.

E. Set up AWS IAM Identity Center (AWS Single Sign-On) in the organization. Configure IAM Identity Center, and integrate it with the company's corporate directory service.

Create a new organization in AWS Organizations with all features turned on. Create the new AWS accounts in the organization. This is a foundational step for managing multiple AWS accounts in a consolidated manner.

Option E: Set up AWS IAM Identity Center (AWS Single Sign-On) in the organization. Configure IAM Identity Center, and integrate it with the company's corporate directory service. AWS Single Sign-On (SSO) is designed to simplify and centralize authentication across multiple AWS accounts.

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485] A company is looking for a solution that can store video archives in AWS from old news footage. The company needs to minimize costs and will rarely need to restore these files. When the files are needed, they must be available in a maximum of five minutes.

What is the MOST cost-effective solution?

A. Store the video archives in Amazon S3 Glacier and use Expedited retrievals.

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486] A company is building a three-tier application on AWS. The presentation tier will serve a static website The logic tier is a containerized application. This application will store data in a relational database. The company wants to simplify deployment and to reduce operational costs.

Which solution will meet these requirements?

A. Use Amazon S3 to host static content. Use Amazon Elastic Container Service (Amazon ECS) with AWS Fargate for compute power. Use a managed Amazon RDS cluster for the database.

Amazon S3 is a highly scalable and cost-effective storage service that can be used to host static content like a static website. It simplifies the storage and delivery of static assets.

AWS Fargate is a serverless compute engine for containers. It allows you to run containers without managing the underlying infrastructure. This simplifies deployment and reduces operational overhead.

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487] A company seeks a storage solution for its application. The solution must be highly available and scalable. The solution also must function as a file system be mountable by multiple Linux instances in AWS and on premises through native protocols, and have no minimum size requirements. The company has set up a Site-to-Site VPN for access from its on-premises network to its VPC.

Which storage solution meets these requirements?

C. Amazon Elastic File System (Amazon EFS) with multiple mount targets

Amazon EFS is a scalable file storage service that can be mounted by multiple Amazon EC2 instances and on-premises servers.

It provides a shared file system with multiple mount targets in different Availability Zones (AZs) for high availability.

Multiple mount targets allow you to mount the file system from different subnets, ensuring that instances in different network segments can access the file system.

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488] A 4-year-old media company is using the AWS Organizations all features feature set to organize its AWS accounts. According to the company's finance team, the billing information on the member accounts must not be accessible to anyone, including the root user of the member accounts.

Which solution will meet these requirements?

C. Create a service control policy (SCP) to deny access to the billing information. Attach the SCP to the root organizational unit (OU).

SCPs in AWS Organizations allow you to set fine-grained permissions and controls over what actions can be performed in member accounts.

By creating an SCP, you can explicitly deny access to billing information for all users, including the root user, under the specified organizational unit (OU).

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489] An ecommerce company runs an application in the AWS Cloud that is integrated with an on-premises warehouse solution. The company uses Amazon Simple Notification Service (Amazon SNS) to send order messages to an on-premises HTTPS endpoint so the warehouse application can process the orders. The local data center team has detected that some of the order messages were not received.

A solutions architect needs to retain messages that are not delivered and analyze the messages for up to 14 days.

Which solution will meet these requirements with the LEAST development effort?

C. Configure an Amazon SNS dead letter queue that has an Amazon Simple Queue Service (Amazon SQS) target with a retention period of 14 days.

Amazon SNS allows you to set up a dead letter queue to capture and retain messages that cannot be delivered to the intended endpoint.

When configuring a DLQ, you can specify an Amazon SQS queue as the target for messages that fail to be delivered.

Amazon SQS provides message retention settings, and in this case, you can set the retention period to 14 days.

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490] A gaming company uses Amazon DynamoDB to store user information such as geographic location, player data, and leaderboards. The company needs to configure continuous backups to an Amazon S3 bucket with a minimal amount of coding. The backups must not affect availability of the application and must not affect the read capacity units (RCUs) that are defined for the table.

Which solution meets these requirements?

B. Export the data directly from DynamoDB to Amazon S3 with continuous backups. Turn on point-in-time recovery for the table.

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491] A solutions architect is designing an asynchronous application to process credit card data validation requests for a bank. The application must be secure and be able to process each request at least once.

Which solution will meet these requirements MOST cost-effectively?

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492] A company has multiple AWS accounts for development work. Some staff consistently use oversized Amazon EC2 instances, which causes the company to exceed the yearly budget for the development accounts. The company wants to centrally restrict the creation of AWS resources in these accounts.

Which solution will meet these requirements with the LEAST development effort?

B. Use AWS Organizations to organize the accounts into organizational units (OUs). Define and attach a service control policy (SCP) to control the usage of EC2 instance types.

AWS Organizations allows you to consolidate multiple AWS accounts into an organization that you create and centrally manage.

Organizational Units (OUs) can be used to group accounts based on different criteria, such as development, production, etc.

Service Control Policies (SCPs) are used to set fine-grained permissions on AWS accounts within an organization.

By defining an SCP and attaching it to the OUs containing the development accounts, you can restrict the EC2 instance types that can be launched.

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493] A company wants to use artificial intelligence (AI) to determine the quality of its customer service calls. The company currently manages calls in four different languages, including English. The company will offer new languages in the future. The company does not have the resources to regularly maintain machine learning (ML) models.

The company needs to create written sentiment analysis reports from the customer service call recordings. The customer service call recording text must be translated into English.

Which combination of steps will meet these requirements? (Choose three.)

D. Use Amazon Transcribe to convert the audio recordings in any language into text.

E. Use Amazon Translate to translate text in any language to English.

F. Use Amazon Comprehend to create the sentiment analysis reports.

Use Amazon Transcribe to Convert Audio Recordings into Text:

Amazon Transcribe is a service that converts speech into text. Use it to transcribe the customer service call recordings into text.

Use Amazon Translate to Translate Text into English:

Amazon Translate is a service that provides language translation. After transcribing the call recordings into text, use Amazon Translate to translate the text into English.

Use Amazon Comprehend to Create Sentiment Analysis Reports:

Amazon Comprehend can be used for sentiment analysis, which involves determining the sentiment or emotion expressed in the text. After translating the text into English, use Amazon Comprehend to analyze the sentiment and create sentiment analysis reports.

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494] D. The request to terminate the EC2 instance does not originate from the CIDR blocks 192.0.2.0/24 or 203.0.113.0/24.

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495] A company is conducting an internal audit. The company wants to ensure that the data in an Amazon S3 bucket that is associated with the company’s AWS Lake Formation data lake does not contain sensitive customer or employee data. The company wants to discover personally identifiable information (PII) or financial information, including passport numbers and credit card numbers.

Which solution will meet these requirements?

C. Configure Amazon Macie to run a data discovery job that uses managed identifiers for the required data types.

Amazon Macie is a security service that uses machine learning to automatically discover, classify, and protect sensitive data like PII or financial information.

By configuring Amazon Macie to run a data discovery job, you can use managed identifiers to search for specific types of sensitive data within the S3 bucket.

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496] A company uses on-premises servers to host its applications. The company is running out of storage capacity. The applications use both block storage and NFS storage. The company needs a high-performing solution that supports local caching without re-architecting its existing applications.

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

B. Deploy an AWS Storage Gateway file gateway to replace NFS storage.

D. Deploy an AWS Storage Gateway volume gateway to replace the block storage.

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497] A company has a service that reads and writes large amounts of data from an Amazon S3 bucket in the same AWS Region. The service is deployed on Amazon EC2 instances within the private subnet of a VPC. The service communicates with Amazon S3 over a NAT gateway in the public subnet. However, the company wants a solution that will reduce the data output costs.

Which solution will meet these requirements MOST cost-effectively?

C. Provision a VPC gateway endpoint. Configure the route table for the private subnet to use the gateway endpoint as the route for all S3 traffic.

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498] A company uses Amazon S3 to store high-resolution pictures in an S3 bucket. To minimize application changes, the company stores the pictures as the latest version of an S3 object. The company needs to retain only the two most recent versions of the pictures.

The company wants to reduce costs. The company has identified the S3 bucket as a large expense.

Which solution will reduce the S3 costs with the LEAST operational overhead?

A. Use S3 Lifecycle to delete expired object versions and retain the two most recent versions.

This approach allows you to automate the deletion of object versions based on lifecycle policies, reducing manual intervention and operational overhead.

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499] A company needs to minimize the cost of its 1 Gbps AWS Direct Connect connection. The company's average connection utilization is less than 10%. A solutions architect must recommend a solution that will reduce the cost without compromising security.

Which solution will meet these requirements?

D. Contact an AWS Direct Connect Partner to order a 200 Mbps hosted connection for an existing AWS account.

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500] A company has multiple Windows file servers on premises. The company wants to migrate and consolidate its files into an Amazon FSx for Windows File Server file system. File permissions must be preserved to ensure that access rights do not change.

Which solutions will meet these requirements? (Choose two.)

A. Deploy AWS DataSync agents on premises. Schedule DataSync tasks to transfer the data to the FSx for Windows File Server file system.

D. Order an AWS Snowcone device. Connect the device to the on-premises network. Launch AWS DataSync agents on the device. Schedule DataSync tasks to transfer the data to the FSx for Windows File Server file system.

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501] A company wants to ingest customer payment data into the company's data lake in Amazon S3. The company receives payment data every minute on average. The company wants to analyze the payment data in real time. Then the company wants to ingest the data into the data lake.

Which solution will meet these requirements with the MOST operational efficiency?

C. Use Amazon Kinesis Data Firehose to ingest data. Use Amazon Kinesis Data Analytics to analyze the data in real time.

Amazon Kinesis Data Firehose:

It is a fully managed service that can reliably load streaming data into data lakes, data stores, and analytics tools.

It can automatically scale to handle varying data throughput.

It simplifies the data delivery process, making it easy to ingest data into Amazon S3.

Amazon Kinesis Data Analytics:

It enables you to analyze streaming data in real-time with SQL queries.

It integrates seamlessly with other AWS services, including Kinesis Data Firehose.

It provides the capability to perform real-time analytics on the streaming data before storing it in Amazon S3.

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502] A company runs a website that uses a content management system (CMS) on Amazon EC2. The CMS runs on a single EC2 instance and uses an Amazon Aurora MySQL Multi-AZ DB instance for the data tier. Website images are stored on an Amazon Elastic Block Store (Amazon EBS) volume that is mounted inside the EC2 instance.

Which combination of actions should a solutions architect take to improve the performance and resilience of the website? (Choose two.)

C. Move the website images onto an Amazon Elastic File System (Amazon EFS) file system that is mounted on every EC2 instance.

E. Create an Amazon Machine Image (AMI) from the existing EC2 instance. Use the AMI to provision new instances behind an Application Load Balancer as part of an Auto Scaling group. Configure the Auto Scaling group to maintain a minimum of two instances. Configure an Amazon CloudFront distribution for the website.

Option C provides moving the website images onto an Amazon EFS file system that is mounted on every EC2 instance. Amazon EFS provides a scalable and fully managed file storage solution that can be accessed concurrently from multiple EC2 instances. This ensures that the website images can be accessed efficiently and consistently by all instances, improving performance.

In Option E The Auto Scaling group maintains a minimum of two instances, ensuring resilience by automatically replacing any unhealthy instances. Additionally, configuring an Amazon CloudFront distribution for the website further improves performance by caching content at edge locations closer to the end-users, reducing latency and improving content delivery.

Hence combining these actions, the website's performance is improved through efficient image storage and content delivery

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503] A company runs an infrastructure monitoring service. The company is building a new feature that will enable the service to monitor data in customer AWS accounts. The new feature will call AWS APIs in customer accounts to describe Amazon EC2 instances and read Amazon CloudWatch metrics.

What should the company do to obtain access to customer accounts in the MOST secure way?

A. Ensure that the customers create an IAM role in their account with read-only EC2 and CloudWatch permissions and a trust policy to the company’s account.

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504] A company needs to connect several VPCs in the us-east-1 Region that span hundreds of AWS accounts. The company's networking team has its own AWS account to manage the cloud network.

What is the MOST operationally efficient solution to connect the VPCs?

C. Create an AWS Transit Gateway in the networking team’s AWS account. Configure static routes from each VPC.

AWS Transit Gateway: It is designed to simplify the connectivity between multiple VPCs. It acts as a central hub that allows you to connect multiple VPCs and on-premises networks. This approach reduces the complexity of managing peering connections individually.

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505] A company has Amazon EC2 instances that run nightly batch jobs to process data. The EC2 instances run in an Auto Scaling group that uses On-Demand billing. If a job fails on one instance, another instance will reprocess the job. The batch jobs run between 12:00 AM and 06:00 AM local time every day.

Which solution will provide EC2 instances to meet these requirements MOST cost-effectively?

C. Create a new launch template for the Auto Scaling group. Set the instances to Spot Instances. Set a policy to scale out based on CPU usage.

Spot Instances: Spot Instances allow you to bid for unused EC2 capacity at a potentially lower cost than On-Demand pricing. This can result in significant cost savings for batch jobs that are fault-tolerant and can be interrupted or retried.

Scaling Policy: Setting a policy to scale out based on CPU usage ensures that additional Spot Instances are launched when the demand for processing power increases during batch job execution. This helps in handling varying workloads efficiently.

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506] A social media company is building a feature for its website. The feature will give users the ability to upload photos. The company expects significant increases in demand during large events and must ensure that the website can handle the upload traffic from users.

Which solution meets these requirements with the MOST scalability?

C. Generate Amazon S3 presigned URLs in the application. Upload files directly from the user's browser into an S3 bucket.

Amazon S3 Presigned URLs: This approach allows the client (user's browser) to directly upload files to Amazon S3 using a presigned URL generated by the server. This offloads the file transfer process from the application servers and enables a direct upload to S3 from the client side.

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507] A company has a web application for travel ticketing. The application is based on a database that runs in a single data center in North America. The company wants to expand the application to serve a global user base. The company needs to deploy the application to multiple AWS Regions. Average latency must be less than 1 second on updates to the reservation database.

The company wants to have separate deployments of its web platform across multiple Regions. However, the company must maintain a single primary reservation database that is globally consistent.

Which solution should a solutions architect recommend to meet these requirements?

A. Convert the application to use Amazon DynamoDB. Use a global table for the center reservation table. Use the correct Regional endpoint in each Regional deployment.

Using DynamoDB's global tables feature, you can achieve a globally consistent reservation database with low latency on updates, making it suitable for serving a global user base. The automatic replication provided by DynamoDB eliminates the need for manual synchronization between Regions.

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508] Topic 1

A company has migrated multiple Microsoft Windows Server workloads to Amazon EC2 instances that run in the us-west-1 Region. The company manually backs up the workloads to create an image as needed.

In the event of a natural disaster in the us-west-1 Region, the company wants to recover workloads quickly in the us-west-2 Region. The company wants no more than 24 hours of data loss on the EC2 instances. The company also wants to automate any backups of the EC2 instances.

Which solutions will meet these requirements with the LEAST administrative effort? (Choose two.)

B. Create an Amazon EC2-backed Amazon Machine Image (AMI) lifecycle policy to create a backup based on tags. Schedule the backup to run twice daily. Configure the copy to the us-west-2 Region.

D. Create a backup vault by using AWS Backup. Use AWS Backup to create a backup plan for the EC2 instances based on tag values. Define the destination for the copy as us-west-2. Specify the backup schedule to run twice daily.

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509] A company operates a two-tier application for image processing. The application uses two Availability Zones, each with one public subnet and one private subnet. An Application Load Balancer (ALB) for the web tier uses the public subnets. Amazon EC2 instances for the application tier use the private subnets.

Users report that the application is running more slowly than expected. A security audit of the web server log files shows that the application is receiving millions of illegitimate requests from a small number of IP addresses. A solutions architect needs to resolve the immediate performance problem while the company investigates a more permanent solution.

What should the solutions architect recommend to meet this requirement?

B. Modify the network ACL for the web tier subnets. Add an inbound deny rule for the IP addresses that are consuming resources.

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510] A global marketing company has applications that run in the ap-southeast-2 Region and the eu-west-1 Region. Applications that run in a VPC in eu-west-1 need to communicate securely with databases that run in a VPC in ap-southeast-2.

Which network design will meet these requirements?

C. Configure a VPC peering connection between the ap-southeast-2 VPC and the eu-west-1 VPUpdate the subnet route tables. Create an inbound rule in the ap-southeast-2 database security group that allows traffic from the eu-west-1 application server IP addresses.

VPC peering connections can be established between VPCs in different AWS Regions.

In this case, a VPC peering connection is set up between the VPC in ap-southeast-2 and the VPC in eu-west-1.

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511] A company is developing software that uses a PostgreSQL database schema. The company needs to configure multiple development environments and databases for the company's developers. On average, each development environment is used for half of the 8-hour workday.

Which solution will meet these requirements MOST cost-effectively?

C. Configure each development environment with its own Amazon Aurora On-Demand PostgreSQL-Compatible database

Amazon Aurora is designed for high-performance, scalability, and availability.

It offers features such as automatic failover, replication, and performance enhancements over traditional PostgreSQL.

On-Demand pricing means you pay for the resources you consume, making it a flexible option.

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512] A company uses AWS Organizations with resources tagged by account. The company also uses AWS Backup to back up its AWS infrastructure resources. The company needs to back up all AWS resources.

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

A. Use AWS Config to identify all untagged resources. Tag the identified resources programmatically. Use tags in the backup plan.

AWS Config can be used to identify untagged resources, and it can provide a comprehensive view of the resource inventory across your AWS Organization.

AWS Backup supports the use of tags in backup plans. By utilizing tags, you can create a backup plan that automatically includes resources based on their tags.

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513] A social media company wants to allow its users to upload images in an application that is hosted in the AWS Cloud. The company needs a solution that automatically resizes the images so that the images can be displayed on multiple device types. The application experiences unpredictable traffic patterns throughout the day. The company is seeking a highly available solution that maximizes scalability.

What should a solutions architect do to meet these requirements?

A. Create a static website hosted in Amazon S3 that invokes AWS Lambda functions to resize the images and store the images in an Amazon S3 bucket.

Hosting a static website in Amazon S3 is a cost-effective and highly available solution. Amazon S3 provides scalable and durable object storage.

A static website in S3 can serve as the front end for user interactions.

In this option, Lambda functions can be triggered by events (e.g., new image uploads to an S3 bucket) to perform image resizing. Lambda can efficiently handle sporadic and unpredictable workloads.

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514] A company is running a microservices application on Amazon EC2 instances. The company wants to migrate the application to an Amazon Elastic Kubernetes Service (Amazon EKS) cluster for scalability. The company must configure the Amazon EKS control plane with endpoint private access set to true and endpoint public access set to false to maintain security compliance. The company must also put the data plane in private subnets. However, the company has received error notifications because the node cannot join the cluster.

Which solution will allow the node to join the cluster?

B. Create interface VPC endpoints to allow nodes to access the control plane.

When the Amazon EKS control plane has private access, nodes need to communicate with the control plane through interface VPC endpoints.

Creating interface VPC endpoints ensures that the nodes in private subnets can securely communicate with the EKS control plane without the need for public IP addresses.

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515] A company is migrating an on-premises application to AWS. The company wants to use Amazon Redshift as a solution.

Which use cases are suitable for Amazon Redshift in this scenario? (Choose three.)

B. Supporting client-side and server-side encryption

C. Building analytics workloads during specified hours and when the application is not active

E. Scaling globally to support petabytes of data and tens of millions of requests per minute

Amazon Redshift supports encryption for data at rest and in transit, providing security features for sensitive data. This makes it suitable for scenarios where encryption is a requirement.

Amazon Redshift is a fully managed data warehouse service optimized for analytical queries. Running analytics workloads during specified hours aligns with Redshift's strengths, allowing for efficient query processing and analysis.

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516] A company provides an API interface to customers so the customers can retrieve their financial information. Еhe company expects a larger number of requests during peak usage times of the year.

The company requires the API to respond consistently with low latency to ensure customer satisfaction. The company needs to provide a compute host for the API.

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

B. Use Amazon API Gateway and AWS Lambda functions with provisioned concurrency.

Amazon API Gateway is a fully managed service that makes it easy for developers to create, publish, maintain, monitor, and secure APIs at any scale.

AWS Lambda is a serverless computing service that automatically scales based on demand.

Provisioned concurrency in AWS Lambda allows you to set a specific number of concurrent executions to ensure that the function is ready to respond quickly to incoming requests.

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517] A company wants to send all AWS Systems Manager Session Manager logs to an Amazon S3 bucket for archival purposes.

Which solution will meet this requirement with the MOST operational efficiency?

A. Enable S3 logging in the Systems Manager console. Choose an S3 bucket to send the session data to.

While AWS Systems Manager supports logging command output to an S3 bucket, this is primarily for storing the output of commands executed through Systems Manager, not specifically for Session Manager logs.

It may not capture all the detailed session logs, including interactive session input/output and other session-specific details.

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518] An application uses an Amazon RDS MySQL DB instance. The RDS database is becoming low on disk space. A solutions architect wants to increase the disk space without downtime.

Which solution meets these requirements with the LEAST amount of effort?

A. Enable storage autoscaling in RDS

Enabling storage autoscaling allows Amazon RDS to automatically adjust the storage capacity of the database without requiring manual intervention.

With autoscaling, the storage capacity can increase dynamically based on the actual usage, preventing the need for manual adjustments.

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519] A consulting company provides professional services to customers worldwide. The company provides solutions and tools for customers to expedite gathering and analyzing data on AWS. The company needs to centrally manage and deploy a common set of solutions and tools for customers to use for self-service purposes.

Which solution will meet these requirements?

B. Create AWS Service Catalog products for the customers.

AWS Service Catalog allows you to create and manage catalogs of IT services that are approved for use on AWS. It enables you to centrally manage and distribute standardized product portfolios.

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520] A company is designing a new web application that will run on Amazon EC2 Instances. The application will use Amazon DynamoDB for backend data storage. The application traffic will be unpredictable. The company expects that the application read and write throughput to the database will be moderate to high. The company needs to scale in response to application traffic.

Which DynamoDB table configuration will meet these requirements MOST cost-effectively?

B. Configure DynamoDB in on-demand mode by using the DynamoDB Standard table class.

On-demand capacity mode allows DynamoDB to automatically scale read and write capacity based on actual application traffic.

It eliminates the need for manual provisioning of read and write capacity, making it well-suited for unpredictable workloads.

DynamoDB Standard Table Class:

The DynamoDB Standard table class provides general-purpose storage with consistent, single-digit millisecond latency. It's suitable for a wide range of applications, including those with unpredictable traffic

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521] A retail company has several businesses. The IT team for each business manages its own AWS account. Each team account is part of an organization in AWS Organizations. Each team monitors its product inventory levels in an Amazon DynamoDB table in the team's own AWS account.

The company is deploying a central inventory reporting application into a shared AWS account. The application must be able to read items from all the teams' DynamoDB tables.

Which authentication option will meet these requirements MOST securely?

C. In every business account, create an IAM role named BU\_ROLE with a policy that gives the role access to the DynamoDB table and a trust policy to trust a specific role in the inventory application account. In the inventory account, create a role named APP\_ROLE that allows access to the STS AssumeRole API operation. Configure the application to use APP\_ROLE and assume the crossaccount role BU\_ROLE to read the DynamoDB table.

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522] A company runs container applications by using Amazon Elastic Kubernetes Service (Amazon EKS). The company's workload is not consistent throughout the day. The company wants Amazon EKS to scale in and out according to the workload.

Which combination of steps will meet these requirements with the LEAST operational overhead? (Choose two.)

B. Use the Kubernetes Metrics Server for Horizontal Pod Autoscaling:

Kubernetes supports Horizontal Pod Autoscaling (HPA) based on custom metrics or resource metrics.

By using the Kubernetes Metrics Server, you can enable HPA to automatically adjust the number of pods in a deployment based on observed custom metrics (such as application-specific metrics) or resource metrics (such as CPU or memory usage).

C. Use the Kubernetes Cluster Autoscaler:

The Kubernetes Cluster Autoscaler automatically adjusts the size of the cluster by adding or removing nodes based on the resource utilization and pod scheduling requirements.

This helps in scaling the cluster itself based on the overall demand.

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523] A company runs a microservice-based serverless web application. The application must be able to retrieve data from multiple Amazon DynamoDB tables A solutions architect needs to give the application the ability to retrieve the data with no impact on the baseline performance of the application.

Which solution will meet these requirements in the MOST operationally efficient way?

B. Amazon CloudFront with Lambda@Edge functions

Amazon CloudFront is a content delivery network (CDN) service that can distribute content globally with low latency.

Lambda@Edge allows you to run custom code in response to CloudFront events, such as viewer requests, origin requests, and more.

By using Lambda@Edge functions, you can customize and augment the behavior of CloudFront.

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524] A company wants to analyze and troubleshoot Access Denied errors and Unauthorized errors that are related to IAM permissions. The company has AWS CloudTrail turned on.

Which solution will meet these requirements with the LEAST effort?

C. Search CloudTrail logs with Amazon Athena queries to identify the errors.

Amazon Athena allows you to query data directly from S3 using standard SQL queries.

CloudTrail logs can be stored in Amazon S3, and Athena makes it easy to analyze the logs using SQL queries.

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525] A company wants to add its existing AWS usage cost to its operation cost dashboard. A solutions architect needs to recommend a solution that will give the company access to its usage cost programmatically. The company must be able to access cost data for the current year and forecast costs for the next 12 months.

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

A. Access usage cost-related data by using the AWS Cost Explorer API with pagination.

AWS Cost Explorer is a tool provided by Amazon Web Services (AWS) that allows users to visualize, understand, and manage their AWS costs and usage.

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526] A solutions architect is reviewing the resilience of an application. The solutions architect notices that a database administrator recently failed over the application's Amazon Aurora PostgreSQL database writer instance as part of a scaling exercise. The failover resulted in 3 minutes of downtime for the application.

Which solution will reduce the downtime for scaling exercises with the LEAST operational overhead?

D. Set up an Amazon RDS proxy for the database. Update the application to use the proxy endpoint.

Amazon RDS Proxy is a fully managed, highly available database proxy for Amazon RDS (Relational Database Service). It provides connection pooling, read/write splitting, and automatic failover, helping to improve the availability and scalability of database workloads.

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527] A company has a regional subscription-based streaming service that runs in a single AWS Region. The architecture consists of web servers and application servers on Amazon EC2 instances. The EC2 instances are in Auto Scaling groups behind Elastic Load Balancers. The architecture includes an Amazon Aurora global database cluster that extends across multiple Availability Zones.

The company wants to expand globally and to ensure that its application has minimal downtime.

Which solution will provide the MOST fault tolerance?

D. Deploy the web tier and the application tier to a second Region. Use an Amazon Aurora global database to deploy the database in the primary Region and the second Region. Use Amazon Route 53 health checks with a failover routing policy to the second Region. Promote the secondary to primary as needed.

An Aurora global database allows you to replicate your database across multiple AWS Regions. This ensures that you have a read-capable secondary database in the second Region, providing low-latency access to the database.

Amazon Route 53 can be configured with health checks to monitor the health of the web and application tiers in both Regions. In the event of a failure in the primary Region, Route 53 can automatically route traffic to the healthy resources in the second Region.

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529] A company is migrating its workloads to AWS. The company has transactional and sensitive data in its databases. The company wants to use AWS Cloud solutions to increase security and reduce operational overhead for the databases.

Which solution will meet these requirements?

B. Migrate the databases to Amazon RDS Configure encryption at rest.

Amazon RDS (Relational Database Service) is a fully managed database service that simplifies database management tasks, such as hardware provisioning, patching, and backups.

Encryption at Rest

Amazon RDS supports encryption at rest, which means data stored in the database is automatically encrypted. This provides an additional layer of security for sensitive data.

Managed Service:

Amazon RDS is a managed service, meaning AWS takes care of operational aspects such as hardware maintenance, software patching, and backups. This reduces operational overhead for the company.

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530] A company has an online gaming application that has TCP and UDP multiplayer gaming capabilities. The company uses Amazon Route 53 to point the application traffic to multiple Network Load Balancers (NLBs) in different AWS Regions. The company needs to improve application performance and decrease latency for the online game in preparation for user growth.

Which solution will meet these requirements?

C. Add AWS Global Accelerator in front of the NLBs. Configure a Global Accelerator endpoint to use the correct listener ports.

AWS Global Accelerator is a service that uses anycast IP addresses to route traffic over the AWS global network to optimal endpoints based on health, geography, and routing policies.

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531] A company needs to integrate with a third-party data feed. The data feed sends a webhook to notify an external service when new data is ready for consumption. A developer wrote an AWS Lambda function to retrieve data when the company receives a webhook callback. The developer must make the Lambda function available for the third party to call.

Which solution will meet these requirements with the MOST operational efficiency?

A. Create a function URL for the Lambda function. Provide the Lambda function URL to the third party for the webhook.

AWS Lambda supports API Gateway integration, which allows you to create an HTTP endpoint (URL) for your Lambda function.

Operational Efficiency:

Directly exposing the Lambda function through a URL eliminates the need for additional services, such as load balancers or message queues, for simple webhook integration.

Simplicity:

This approach is straightforward and easy to implement. It provides a direct URL that the third party can use to invoke the Lambda function when the webhook is triggered.

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532] A company has a workload in an AWS Region. Customers connect to and access the workload by using an Amazon API Gateway REST API. The company uses Amazon Route 53 as its DNS provider. The company wants to provide individual and secure URLs for all customers.

Which combination of steps will meet these requirements with the MOST operational efficiency? (Choose three.)

A. Register the required domain in a registrar. Create a wildcard custom domain name in a Route 53 hosted zone and record in the zone that points to the API Gateway endpoint.

D. Request a wildcard certificate that matches the custom domain name in AWS Certificate Manager (ACM) in the same Region.

F. Create a custom domain name in API Gateway for the REST API. Import the certificate from AWS Certificate Manager (ACM).

Registering the domain in a registrar and creating a wildcard custom domain name in Route 53 allows you to manage the DNS records efficiently. The DNS records can point to the API Gateway endpoint.

ACM provides a simple way to request and manage SSL/TLS certificates. Requesting a wildcard certificate for the custom domain ensures that it covers all subdomains, allowing for individual and secure URLs.

API Gateway allows you to create a custom domain name and associate it with your REST API. By importing a wildcard certificate from AWS Certificate Manager (ACM), you can secure the custom domain.

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533] A company stores data in Amazon S3. According to regulations, the data must not contain personally identifiable information (PII). The company recently discovered that S3 buckets have some objects that contain PII. The company needs to automatically detect PII in S3 buckets and to notify the company’s security team.

Which solution will meet these requirements?

A. Use Amazon Macie. Create an Amazon EventBridge rule to filter the SensitiveData event type from Macie findings and to send an Amazon Simple Notification Service (Amazon SNS) notification to the security team.

Amazon Macie is a service designed for data discovery and classification. It can identify sensitive data, including personally identifiable information (PII). By creating an EventBridge rule to filter the SensitiveData event type, you can specifically target PII-related findings and notify the security team using Amazon SNS.

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534] A company wants to build a logging solution for its multiple AWS accounts. The company currently stores the logs from all accounts in a centralized account. The company has created an Amazon S3 bucket in the centralized account to store the VPC flow logs and AWS CloudTrail logs. All logs must be highly available for 30 days for frequent analysis, retained for an additional 60 days for backup purposes, and deleted 90 days after creation.

Which solution will meet these requirements MOST cost-effectively?

B. Transition objects to the S3 Standard-Infrequent Access (S3 Standard-IA) storage class 30 days after creation. Move all objects to the S3 Glacier Flexible Retrieval storage class after 90 days. Write an expiration action that directs Amazon S3 to delete objects after 90 days.

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535] A company is building an Amazon Elastic Kubernetes Service (Amazon EKS) cluster for its workloads. All secrets that are stored in Amazon EKS must be encrypted in the Kubernetes etcd key-value store.

Which solution will meet these requirements?

B. Create a new AWS Key Management Service (AWS KMS) key. Enable Amazon EKS KMS secrets encryption on the Amazon EKS cluster.

B. This option is the most appropriate for encrypting secrets stored in the Kubernetes etcd key-value store within Amazon EKS. Amazon EKS KMS secrets encryption allows you to encrypt secrets in etcd using an AWS Key Management Service (KMS) key. This enhances security by ensuring that the secrets are encrypted at rest.

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536] A company wants to provide data scientists with near real-time read-only access to the company's production Amazon RDS for PostgreSQL database. The database is currently configured as a Single-AZ database. The data scientists use complex queries that will not affect the production database. The company needs a solution that is highly available.

Which solution will meet these requirements MOST cost-effectively?

C. Change the setup from a Single-AZ to a Multi-AZ instance deployment. Provide two additional read replicas for the data scientists.

C. Changing to a Multi-AZ instance deployment and providing two additional read replicas for the data scientists is a good solution. Multi-AZ provides high availability, and read replicas can be used to offload read-only queries from the production database, allowing data scientists to run their complex queries without impacting the production environment.

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537] A company runs a three-tier web application in the AWS Cloud that operates across three Availability Zones. The application architecture has an Application Load Balancer, an Amazon EC2 web server that hosts user session states, and a MySQL database that runs on an EC2 instance. The company expects sudden increases in application traffic. The company wants to be able to scale to meet future application capacity demands and to ensure high availability across all three Availability Zones.

Which solution will meet these requirements?

A. Migrate the MySQL database to Amazon RDS for MySQL with a Multi-AZ DB cluster deployment. Use Amazon ElastiCache for Redis with high availability to store session data and to cache reads. Migrate the web server to an Auto Scaling group that is in three Availability Zones.

Migrating the MySQL database to Amazon RDS for MySQL with a Multi-AZ DB cluster deployment provides high availability by replicating the database across multiple Availability Zones.

Using Amazon ElastiCache for Redis with high availability ensures that session data and reads are cached effectively, improving performance

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538] A global video streaming company uses Amazon CloudFront as a content distribution network (CDN). The company wants to roll out content in a phased manner across multiple countries. The company needs to ensure that viewers who are outside the countries to which the company rolls out content are not able to view the content.

Which solution will meet these requirements?

A. Add geographic restrictions to the content in CloudFront by using an allow list. Set up a custom error message.

CloudFront allows you to set up geographic restrictions by creating an allow list. This allows you to specify the countries from which viewers are allowed to access your content. Viewers from countries not in the allow list will be restricted from accessing the content.

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539] A company wants to use the AWS Cloud to improve its on-premises disaster recovery (DR) configuration. The company's core production business application uses Microsoft SQL Server Standard, which runs on a virtual machine (VM). The application has a recovery point objective (RPO) of 30 seconds or fewer and a recovery time objective (RTO) of 60 minutes. The DR solution needs to minimize costs wherever possible.

Which solution will meet these requirements?

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540] A company has an on-premises server that uses an Oracle database to process and store customer information. The company wants to use an AWS database service to achieve higher availability and to improve application performance. The company also wants to offload reporting from its primary database system.

Which solution will meet these requirements in the MOST operationally efficient way?

D. Use Amazon RDS deployed in a Multi-AZ instance deployment to create an Amazon Aurora database. Direct the reporting functions to the reader instances.

Deploying Amazon RDS in a Multi-AZ instance deployment ensures high availability by replicating the primary database instance in a different Availability Zone (AZ). This provides automatic failover in case of a hardware failure or maintenance event.

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541] A company wants to build a web application on AWS. Client access requests to the website are not predictable and can be idle for a long time. Only customers who have paid a subscription fee can have the ability to sign in and use the web application.

Which combination of steps will meet these requirements MOST cost-effectively? (Choose three.)

A. Create an AWS Lambda function to retrieve user information from Amazon DynamoDB. Create an Amazon API Gateway endpoint to accept RESTful APIs. Send the API calls to the Lambda function.

C. Create an Amazon Cognito user pool to authenticate users.

E. Use AWS Amplify to serve the frontend web content with HTML, CSS, and JS. Use an integrated Amazon CloudFront configuration.

AWS Lambda is a serverless computing service, and its pay-per-use pricing model can be cost-effective for sporadic and unpredictable workloads. DynamoDB is a NoSQL database that can scale with demand.

Amazon Cognito provides a scalable and secure user directory for your web application. It allows you to manage user identities and authentication in a cost-effective manner. User pools can be used to handle user registration, authentication, and account recovery.

AWS Amplify simplifies the development of scalable and secure cloud-powered web and mobile apps. CloudFront is a content delivery network (CDN) that can efficiently distribute your web content globally, improving performance.

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542] A media company uses an Amazon CloudFront distribution to deliver content over the internet. The company wants only premium customers to have access to the media streams and file content. The company stores all content in an Amazon S3 bucket. The company also delivers content on demand to customers for a specific purpose, such as movie rentals or music downloads.

Which solution will meet these requirements?

B. Generate and provide CloudFront signed URLs to premium customers.

This solution involves generating signed URLs for the content, which allows access only to those who have the appropriate permissions. Signed URLs can be time-limited, and you can define custom policies specifying who can access the content and for how long.

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543] A company runs Amazon EC2 instances in multiple AWS accounts that are individually bled. The company recently purchased a Savings Pian. Because of changes in the company’s business requirements, the company has decommissioned a large number of EC2 instances. The company wants to use its Savings Plan discounts on its other AWS accounts.

Which combination of steps will meet these requirements? (Choose two.)

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544] A retail company uses a regional Amazon API Gateway API for its public REST APIs. The API Gateway endpoint is a custom domain name that points to an Amazon Route 53 alias record. A solutions architect needs to create a solution that has minimal effects on customers and minimal data loss to release the new version of APIs.

Which solution will meet these requirements?

A. Create a canary release deployment stage for API Gateway. Deploy the latest API version. Point an appropriate percentage of traffic to the canary stage. After API verification, promote the canary stage to the production stage.

A canary release deployment is a strategy in software development and release management where a new version of a software application or service is gradually rolled out to a small subset of users before making it available to the entire user base.

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545] A company wants to direct its users to a backup static error page if the company's primary website is unavailable. The primary website's DNS records are hosted in Amazon Route 53. The domain is pointing to an Application Load Balancer (ALB). The company needs a solution that minimizes changes and infrastructure overhead.

Which solution will meet these requirements?

B. Set up a Route 53 active-passive failover configuration. Direct traffic to a static error page that is hosted in an Amazon S3 bucket when Route 53 health checks determine that the ALB endpoint is unhealthy.

An active-passive failover configuration in Route 53 involves designating one endpoint (primary, in this case, the ALB) as active and another endpoint (S3 bucket hosting a static error page) as passive.

Route 53 health checks can be configured to monitor the health of the ALB endpoint. If the health checks determine that the ALB endpoint is unhealthy (i.e., the primary website is unavailable), Route 53 automatically directs traffic to the passive endpoint (S3 bucket with the static error page).

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546] A recent analysis of a company's IT expenses highlights the need to reduce backup costs. The company's chief information officer wants to simplify the on-premises backup infrastructure and reduce costs by eliminating the use of physical backup tapes. The company must preserve the existing investment in the on-premises backup applications and workflows.

What should a solutions architect recommend?

D. Set up AWS Storage Gateway to connect with the backup applications using the iSCSI-virtual tape library (VTL) interface.

AWS Storage Gateway provides a hybrid cloud storage service that enables on-premises applications to seamlessly use cloud storage.

The iSCSI-virtual tape library (VTL) interface of AWS Storage Gateway is designed to integrate with existing backup applications that use tape-based workflows. It emulates a tape library, allowing you to store virtual tapes in Amazon S3 or Glacier, providing a cost-effective and scalable alternative to physical tapes.

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547] A company has data collection sensors at different locations. The data collection sensors stream a high volume of data to the company. The company wants to design a platform on AWS to ingest and process high-volume streaming data. The solution must be scalable and support data collection in near real time. The company must store the data in Amazon S3 for future reporting.

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

A. Use Amazon Kinesis Data Firehose to deliver streaming data to Amazon S3.

Amazon Kinesis Data Firehose: It is a fully managed service for ingesting, transforming, and delivering streaming data to various destinations, including Amazon S3. Kinesis Data Firehose can scale automatically based on the volume of incoming data, and it simplifies the process of delivering data to S3 without the need for manual intervention.

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548] A company has separate AWS accounts for its finance, data analytics, and development departments. Because of costs and security concerns, the company wants to control which services each AWS account can use.

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

B. Create organization units (OUs) for each department in AWS Organizations. Attach service control policies (SCPs) to the OUs.

AWS Organizations and Service Control Policies (SCPs): AWS Organizations provides a way to centrally manage and organize multiple AWS accounts. By creating separate organizational units (OUs) for each department, you can apply Service Control Policies (SCPs) to control which AWS services each department's accounts can access.

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549] A company has created a multi-tier application for its ecommerce website. The website uses an Application Load Balancer that resides in the public subnets, a web tier in the public subnets, and a MySQL cluster hosted on Amazon EC2 instances in the private subnets. The MySQL database needs to retrieve product catalog and pricing information that is hosted on the internet by a third-party provider. A solutions architect must devise a strategy that maximizes security without increasing operational overhead.

What should the solutions architect do to meet these requirements?

B. Deploy a NAT gateway in the public subnets. Modify the private subnet route table to direct all internet-bound traffic to the NAT gateway.

A NAT gateway is a fully managed service provided by AWS that allows instances in a private subnet to initiate outbound traffic to the internet while preventing inbound traffic from reaching those instances. It simplifies the process of enabling internet access for instances in private subnets without the need for managing a separate NAT instance.

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550] A company is using AWS Key Management Service (AWS KMS) keys to encrypt AWS Lambda environment variables. A solutions architect needs to ensure that the required permissions are in place to decrypt and use the environment variables.

Which steps must the solutions architect take to implement the correct permissions? (Choose two.)

B. Add AWS KMS permissions in the Lambda execution role.

D. Allow the Lambda execution role in the AWS KMS key policy.

The Lambda execution role is the role assumed by the Lambda function when it runs. It needs permissions to use the KMS key to decrypt the environment variables.

Grant the kms:Decrypt permission on the specific KMS key used for encryption to the Lambda execution role.

The AWS KMS key policy controls who can use the KMS key. To grant the Lambda execution role permission to decrypt using the KMS key, modify the key policy to include a statement allowing the Lambda execution role to perform kms:Decrypt on the key.

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551] A company has a financial application that produces reports. The reports average 50 KB in size and are stored in Amazon S3. The reports are frequently accessed during the first week after production and must be stored for several years. The reports must be retrievable within 6 hours.

Which solution meets these requirements MOST cost-effectively?

A. Use S3 Standard. Use an S3 Lifecycle rule to transition the reports to S3 Glacier after 7 days.

After the initial period, using an S3 Lifecycle rule to transition the reports to the S3 Glacier storage class is a cost-effective approach. Glacier is designed for long-term archival storage with lower storage costs compared to S3 Standard.

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552] A company needs to optimize the cost of its Amazon EC2 instances. The company also needs to change the type and family of its EC2 instances every 2-3 months.

What should the company do to meet these requirements?

B. Purchase a No Upfront Compute Savings Plan for a 1-year term.

WHat is Upfront --- You don't pay anything upfront. You receive a smaller discount, but you free up capital for other projects.

A No Upfront option means no upfront payment is required, which provides flexibility.

1-year Term: A 1-year term aligns with the company's need to change the type and family of its EC2 instances every 2-3 months. While Compute Savings Plans have a commitment term, choosing a 1-year term allows for more frequent adjustments compared to a 3-year term.

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553] A solutions architect needs to review a company's Amazon S3 buckets to discover personally identifiable information (PII). The company stores the PII data in the us-east-1 Region and us-west-2 Region.

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

A. Configure Amazon Macie in each Region. Create a job to analyze the data that is in Amazon S3.

Amazon Macie is a managed data security and data privacy service that uses machine learning to automatically discover, classify, and protect sensitive data, including personally identifiable information (PII). By configuring Amazon Macie in each region where the company stores PII data, you can create jobs to analyze the data in Amazon S3 and identify any PII.

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554] A company's SAP application has a backend SQL Server database in an on-premises environment. The company wants to migrate its on-premises application and database server to AWS. The company needs an instance type that meets the high demands of its SAP database. On-premises performance data shows that both the SAP application and the database have high memory utilization.

Which solution will meet these requirements?

C. Use the memory optimized instance family for both the application and the database.

Memory optimized instances are designed to provide a high memory-to-CPU ratio, which aligns well with workloads that have significant memory requirements, such as SAP applications with backend databases.

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555] A company runs an application in a VPC with public and private subnets. The VPC extends across multiple Availability Zones. The application runs on Amazon EC2 instances in private subnets. The application uses an Amazon Simple Queue Service (Amazon SQS) queue.

A solutions architect needs to design a secure solution to establish a connection between the EC2 instances and the SQS queue.

Which solution will meet these requirements?

A. Implement an interface VPC endpoint for Amazon SQS. Configure the endpoint to use the private subnets. Add to the endpoint a security group that has an inbound access rule that allows traffic from the EC2 instances that are in the private subnets.

Interface VPC endpoints are used for services that are accessed over the Internet, and in this case, it's Amazon SQS. By implementing an interface VPC endpoint for SQS, you can ensure that the traffic stays within the Amazon network.

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556] A solutions architect is using an AWS CloudFormation template to deploy a three-tier web application. The web application consists of a web tier and an application tier that stores and retrieves user data in Amazon DynamoDB tables. The web and application tiers are hosted on Amazon EC2 instances, and the database tier is not publicly accessible. The application EC2 instances need to access the DynamoDB tables without exposing API credentials in the template.

What should the solutions architect do to meet these requirements?

B. Create an IAM role that has the required permissions to read and write from the DynamoDB tables. Add the role to the EC2 instance profile, and associate the instance profile with the application instances.

Option B is the correct choice because it leverages IAM roles and instance profiles for EC2 instances. By creating an IAM role with the necessary permissions to access DynamoDB and associating it with the EC2 instance profile, you can securely grant permissions to the EC2 instances without exposing API credentials in the CloudFormation template.

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557] A solutions architect manages an analytics application. The application stores large amounts of semistructured data in an Amazon S3 bucket. The solutions architect wants to use parallel data processing to process the data more quickly. The solutions architect also wants to use information that is stored in an Amazon Redshift database to enrich the data.

Which solution will meet these requirements?

B. Use Amazon EMR to process the S3 data. Use Amazon EMR with the Amazon Redshift data to enrich the S3 data.

B. Amazon EMR is a cloud-based big data platform that uses Apache Hadoop and other open-source frameworks to process and analyze large datasets. EMR supports parallel data processing, making it a good fit for the requirement. Additionally, using EMR with the Amazon Redshift data allows for efficient enrichment of the S3 data.

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558] A company has two VPCs that are located in the us-west-2 Region within the same AWS account. The company needs to allow network traffic between these VPCs. Approximately 500 GB of data transfer will occur between the VPCs each month.

What is the MOST cost-effective solution to connect these VPCs?

C. Set up a VPC peering connection between the VPCs. Update the route tables of each VPC to use the VPC peering connection for inter-VPC communication.

VPC peering allows communication between VPCs within the same AWS account. It is a cost-effective solution, especially when the VPCs are located in the same region. In this case, both VPCs are in the us-west-2 region.

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559] Question #559Topic 1

A company hosts multiple applications on AWS for different product lines. The applications use different compute resources, including Amazon EC2 instances and Application Load Balancers. The applications run in different AWS accounts under the same organization in AWS Organizations across multiple AWS Regions. Teams for each product line have tagged each compute resource in the individual accounts.

The company wants more details about the cost for each product line from the consolidated billing feature in Organizations.

Which combination of steps will meet these requirements? (Choose two.)

B. Select a specific user-defined tag in the AWS Billing console.

E. Activate the selected tag from the Organizations management account.

User-defined tags are tags that you create and attach to your AWS resources. In this case, since teams for each product line have tagged each compute resource with user-defined tags, selecting a specific user-defined tag in the AWS Billing console allows you to filter costs based on those tags.

The consolidated billing feature in AWS Organizations allows you to view and manage costs across multiple AWS accounts. By activating the selected tag from the Organizations management account, you ensure that the tagged resources from all linked accounts are included in the consolidated billing report. This enables you to get detailed cost information for each product line.

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560] A company's solutions architect is designing an AWS multi-account solution that uses AWS Organizations. The solutions architect has organized the company's accounts into organizational units (OUs).

The solutions architect needs a solution that will identify any changes to the OU hierarchy. The solution also needs to notify the company's operations team of any changes.

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

A. Provision the AWS accounts by using AWS Control Tower. Use account drift notifications to identify the changes to the OU hierarchy.

AWS Control Tower is a service that simplifies the process of setting up and governing a secure, multi-account AWS environment based on AWS best practices. It provides a pre-defined landing zone with an organizational structure, OUs, and guardrails to enforce security and compliance.

the organizational units (OUs) are established as part of the AWS Control Tower landing zone. If there are any changes to the OU hierarchy (such as moving accounts between OUs), these changes are considered drift, and AWS Control Tower can generate account drift notifications.

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561] A company's website handles millions of requests each day, and the number of requests continues to increase. A solutions architect needs to improve the response time of the web application. The solutions architect determines that the application needs to decrease latency when retrieving product details from the Amazon DynamoDB table.

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

A. Set up a DynamoDB Accelerator (DAX) cluster. Route all read requests through DAX.

DynamoDB Accelerator (DAX) is a fully managed, highly available, and in-memory cache for DynamoDB. It is designed to improve the response time of read-intensive DynamoDB workloads by caching frequently accessed data. Using DAX helps reduce the read latency as it retrieves data from an in-memory cache instead of the DynamoDB table.

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562] A solutions architect needs to ensure that API calls to Amazon DynamoDB from Amazon EC2 instances in a VPC do not travel across the internet.

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

A. Create a route table entry for the endpoint.

B. Create a gateway endpoint for DynamoDB.

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563] clusters and workloads from a central location.

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

B. Use Amazon EKS Connector to register and connect all Kubernetes clusters.

Amazon EKS Connector is designed to help centralize the management of multiple Amazon Elastic Kubernetes Service (EKS) clusters. It allows you to register and connect multiple EKS clusters, providing a unified view of the clusters from the AWS Management Console. This solution aligns well with the requirement of managing clusters and workloads from a central location with the least operational overhead.

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564] A company is building an ecommerce application and needs to store sensitive customer information. The company needs to give customers the ability to complete purchase transactions on the website. The company also needs to ensure that sensitive customer data is protected, even from database administrators.

Which solution meets these requirements?

B. Store sensitive data in Amazon RDS for MySQL. Use AWS Key Management Service (AWS KMS) client-side encryption to encrypt the data.

Amazon RDS (Relational Database Service) for MySQL is a managed relational database service that makes it easy to set up, operate, and scale a MySQL database in the cloud.

AWS Key Management Service (KMS) provides a way to create and control encryption keys. In the context of client-side encryption, the application (in this case, the ecommerce application) handles the encryption and decryption of data before it is stored in or retrieved from the database.

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565] A company has an on-premises MySQL database that handles transactional data. The company is migrating the database to the AWS Cloud. The migrated database must maintain compatibility with the company's applications that use the database. The migrated database also must scale automatically during periods of increased demand.

Which migration solution will meet these requirements?

C. Use AWS Database Migration Service (AWS DMS) to migrate the database to Amazon Aurora. Turn on Aurora Auto Scaling.

AWS DMS is a fully managed service that helps you migrate databases to AWS easily and securely. It supports homogeneous and heterogeneous database migrations.

Amazon Aurora is a fully managed relational database service that is compatible with MySQL and PostgreSQL. It provides high performance and availability with compatibility for MySQL, making it a seamless choice for migrating MySQL databases.

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566] A company runs multiple Amazon EC2 Linux instances in a VPC across two Availability Zones. The instances host applications that use a hierarchical directory structure. The applications need to read and write rapidly and concurrently to shared storage.

What should a solutions architect do to meet these requirements?

B. Create an Amazon Elastic File System (Amazon EFS) file system. Mount the EFS file system from each EC2 instance.

Amazon EFS is a fully managed, scalable file storage service designed to provide shared access to files across multiple Amazon EC2 instances. It is particularly well-suited for use cases that require concurrent access from multiple instances.

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567] A solutions architect is designing a workload that will store hourly energy consumption by business tenants in a building. The sensors will feed a database through HTTP requests that will add up usage for each tenant. The solutions architect must use managed services when possible. The workload will receive more features in the future as the solutions architect adds independent components.

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

A. Use Amazon API Gateway with AWS Lambda functions to receive the data from the sensors, process the data, and store the data in an Amazon DynamoDB table.

Amazon API Gateway is a fully managed service that makes it easy for developers to create, publish, maintain, monitor, and secure APIs at any scale. It acts as an entry point for HTTP requests and can handle the communication with the sensors.

In this scenario, you can use Lambda functions to process the data received from the sensors.

Amazon DynamoDB is a fully managed NoSQL database that can handle the storage of the hourly energy consumption data.

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568] A solutions architect is designing the storage architecture for a new web application used for storing and viewing engineering drawings. All application components will be deployed on the AWS infrastructure.

The application design must support caching to minimize the amount of time that users wait for the engineering drawings to load. The application must be able to store petabytes of data.

Which combination of storage and caching should the solutions architect use?

A. Amazon S3 with Amazon CloudFront

It is suitable for storing petabytes of data and is designed to provide low-latency access.

Amazon CloudFront is a content delivery network (CDN) service that securely delivers data, videos, applications, and APIs to customers globally with low latency and high transfer speeds. By integrating CloudFront with S3, you can distribute the engineering drawings to edge locations worldwide, reducing the latency for users and improving load times.

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569] An Amazon EventBridge rule targets a third-party API. The third-party API has not received any incoming traffic. A solutions architect needs to determine whether the rule conditions are being met and if the rule's target is being invoked.

Which solution will meet these requirements?

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570] A company has a large workload that runs every Friday evening. The workload runs on Amazon EC2 instances that are in two Availability Zones in the us-east-1 Region. Normally, the company must run no more than two instances at all times. However, the company wants to scale up to six instances each Friday to handle a regularly repeating increased workload.

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

B. Create an Auto Scaling group that has a scheduled action.

By creating an Auto Scaling group with a scheduled action, you can configure the group to automatically adjust the desired capacity based on a specified schedule. In this case, you can set up a scheduled action to increase the desired capacity to six instances every Friday evening.

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571] A company is creating a REST API. The company has strict requirements for the use of TLS. The company requires TLSv1.3 on the API endpoints. The company also requires a specific public third-party certificate authority (CA) to sign the TLS certificate.

Which solution will meet these requirements?

A. Use a local machine to create a certificate that is signed by the third-party CImport the certificate into AWS Certificate Manager (ACM). Create an HTTP API in Amazon API Gateway with a custom domain. Configure the custom domain to use the certificate.

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572] A company runs an application on AWS. The application receives inconsistent amounts of usage. The application uses AWS Direct Connect to connect to an on-premises MySQL-compatible database. The on-premises database consistently uses a minimum of 2 GiB of memory.

The company wants to migrate the on-premises database to a managed AWS service. The company wants to use auto scaling capabilities to manage unexpected workload increases.

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

C. Provision an Amazon Aurora Serverless v2 database with a minimum capacity of 1 Aurora capacity unit (ACU).

Aurora Serverless is designed for applications with variable or unpredictable workloads. With Aurora Serverless v2, you can set the minimum capacity to 1 Aurora capacity unit (ACU), and it will automatically scale based on the actual workload.

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573] A company wants to use an event-driven programming model with AWS Lambda. The company wants to reduce startup latency for Lambda functions that run on Java 11. The company does not have strict latency requirements for the applications. The company wants to reduce cold starts and outlier latencies when a function scales up.

Which solution will meet these requirements MOST cost-effectively?

D. Configure Lambda SnapStart.

Lambda Cold Start:

When a Lambda function is invoked, it may take a bit of time for the system to set up everything needed to run the function. This initial setup time is called a "cold start." Cold starts can add some delay, especially if the function hasn't been used recently.

Lambda SnapStart:

SnapStart is a feature in AWS Lambda designed to make these cold starts faster, specifically for functions written in Java. Instead of starting from scratch every time a function is called, SnapStart pre-warms the environment. It's like getting things ready in advance so that when your function is called, it can start quickly without much delay.

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574] A financial services company launched a new application that uses an Amazon RDS for MySQL database. The company uses the application to track stock market trends. The company needs to operate the application for only 2 hours at the end of each week. The company needs to optimize the cost of running the database.

Which solution will meet these requirements MOST cost-effectively?

A. Migrate the existing RDS for MySQL database to an Aurora Serverless v2 MySQL database cluster.

Aurora Serverless allows the database to automatically start up, shut down, and scale capacity based on actual usage. With Aurora Serverless v2, you can set a minimum and maximum capacity for the cluster. This is suitable for intermittent workloads, such as the application that is only operated for 2 hours at the end of each week.

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575] A company deploys its applications on Amazon Elastic Kubernetes Service (Amazon EKS) behind an Application Load Balancer in an AWS Region. The application needs to store data in a PostgreSQL database engine. The company wants the data in the database to be highly available. The company also needs increased capacity for read workloads.

Which solution will meet these requirements with the MOST operational efficiency?

C. Create an Amazon RDS database with Multi-AZ DB cluster deployment.

Amazon RDS with Multi-AZ (Availability Zone) DB cluster deployment provides high availability by automatically replicating the primary database to a standby instance in a different Availability Zone. This helps ensure database availability in the event of a failure in the primary Availability Zone.

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576] A company is building a RESTful serverless web application on AWS by using Amazon API Gateway and AWS Lambda. The users of this web application will be geographically distributed, and the company wants to reduce the latency of API requests to these users.

Which type of endpoint should a solutions architect use to meet these requirements?

D. Edge-optimized endpoint

Edge-optimized endpoints use the global CloudFront network to distribute API traffic across multiple edge locations. This reduces latency for users by serving API requests from the edge locations closest to the users. It leverages the AWS Global Accelerator and CloudFront to automatically route requests to the nearest AWS endpoint.

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577] A company uses an Amazon CloudFront distribution to serve content pages for its website. The company needs to ensure that clients use a TLS certificate when accessing the company's website. The company wants to automate the creation and renewal of the TLS certificates.

Which solution will meet these requirements with the MOST operational efficiency?

C. Use AWS Certificate Manager (ACM) to create a certificate. Use DNS validation for the domain.

AWS Certificate Manager (ACM): ACM is a fully managed service that allows you to easily provision, manage, and deploy public and private Secure Sockets Layer/Transport Layer Security (SSL/TLS) certificates for use with AWS services and your internal connected resources. It is designed for automation and ease of use.

DNS Validation: DNS validation involves adding a DNS record to your domain's DNS configuration. This method is more suitable for automation as it does not require manual intervention, and it can be easily integrated into automated certificate issuance and renewal processes.

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578] A company deployed a serverless application that uses Amazon DynamoDB as a database layer. The application has experienced a large increase in users. The company wants to improve database response time from milliseconds to microseconds and to cache requests to the database.

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

A. Use DynamoDB Accelerator (DAX).

DAX is a fully managed, highly available, in-memory cache for DynamoDB that delivers fast response times for DynamoDB queries. It can be seamlessly integrated with existing DynamoDB applications, requiring minimal code changes. DAX allows you to cache frequently accessed data, reducing the need to read from the DynamoDB table and improving response times.

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579] A company runs an application that uses Amazon RDS for PostgreSQL. The application receives traffic only on weekdays during business hours. The company wants to optimize costs and reduce operational overhead based on this usage.

Which solution will meet these requirements?

A. Use the Instance Scheduler on AWS to configure start and stop schedules.

Instance Scheduler: The AWS Instance Scheduler is a solution that allows you to schedule the start and stop times of your Amazon EC2 and RDS instances. By configuring start and stop schedules, you can ensure that resources are only running during the required business hours, thereby optimizing costs.

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580] A company uses locally attached storage to run a latency-sensitive application on premises. The company is using a lift and shift method to move the application to the AWS Cloud. The company does not want to change the application architecture.

Which solution will meet these requirements MOST cost-effectively?

D. Host the application on an Amazon EC2 instance. Use an Amazon Elastic Block Store (Amazon EBS) GP3 volume to run the application.

Amazon EC2 Instance with GP3 Volume (Option D): Amazon EBS GP3 volumes are designed to provide cost savings compared to GP2 volumes while still offering good performance for a broad range of workloads. GP3 volumes allow you to provision the IOPS (input/output operations per second) and throughput that your application needs, giving you flexibility and cost-effectiveness.

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581] A company runs a stateful production application on Amazon EC2 instances. The application requires at least two EC2 instances to always be running.

A solutions architect needs to design a highly available and fault-tolerant architecture for the application. The solutions architect creates an Auto Scaling group of EC2 instances.

Which set of additional steps should the solutions architect take to meet these requirements?

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582] An ecommerce company uses Amazon Route 53 as its DNS provider. The company hosts its website on premises and in the AWS Cloud. The company's on-premises data center is near the us-west-1 Region. The company uses the eu-central-1 Region to host the website. The company wants to minimize load time for the website as much as possible.

Which solution will meet these requirements?

A. Set up a geolocation routing policy. Send the traffic that is near us-west-1 to the on-premises data center. Send the traffic that is near eu-central-1 to eu-central-1.

Geolocation routing directs traffic based on the geographic location of the user. This option would send users near us-west-1 to the on-premises data center and users near eu-central-1 to eu-central-1. While this approach considers geographic location, it might not always result in the lowest latency.

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583] A company has 5 PB of archived data on physical tapes. The company needs to preserve the data on the tapes for another 10 years for compliance purposes. The company wants to migrate to AWS in the next 6 months. The data center that stores the tapes has a 1 Gbps uplink internet connectivity.

Which solution will meet these requirements MOST cost-effectively?

C. Order multiple AWS Snowball devices that have Tape Gateway. Copy the physical tapes to virtual tapes in Snowball. Ship the Snowball devices to AWS. Create a lifecycle policy to move the tapes to Amazon S3 Glacier Deep Archive.

AWS Snowball devices can be more cost-effective than transferring large amounts of data over a 1 Gbps internet connection, especially when dealing with petabytes of data.

AWS, a lifecycle policy can be configured to move the data to Amazon S3 Glacier Deep Archive, which is a cost-effective storage class designed for long-term archival.

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584] A company is deploying an application that processes large quantities of data in parallel. The company plans to use Amazon EC2 instances for the workload. The network architecture must be configurable to prevent groups of nodes from sharing the same underlying hardware.

Which networking solution meets these requirements?

A. Run the EC2 instances in a spread placement group.

A spread placement group is a logical grouping of instances that are placed on distinct underlying hardware. This ensures that instances within the group are physically separated, reducing the risk of correlated failures. This option is suitable for applications that need to maximize the level of isolation.

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585] A solutions architect is designing a disaster recovery (DR) strategy to provide Amazon EC2 capacity in a failover AWS Region. Business requirements state that the DR strategy must meet capacity in the failover Region.

Which solution will meet these requirements?

D. Purchase a Capacity Reservation in the failover Region.

A Capacity Reservation allows you to reserve a specific amount of EC2 instance capacity in a given region without purchasing specific instances. This reserved capacity is dedicated to your account and can be utilized for launching instances when needed. Capacity Reservations offer flexibility, allowing you to launch different instance types and sizes within the reserved capacity.

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586] A company has five organizational units (OUs) as part of its organization in AWS Organizations. Each OU correlates to the five businesses that the company owns. The company's research and development (R&D) business is separating from the company and will need its own organization. A solutions architect creates a separate new management account for this purpose.

What should the solutions architect do next in the new management account?

B. Invite the R&D AWS account to be part of the new organization after the R&D AWS account has left the prior organization.

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587] A company is designing a solution to capture customer activity in different web applications to process analytics and make predictions. Customer activity in the web applications is unpredictable and can increase suddenly. The company requires a solution that integrates with other web applications. The solution must include an authorization step for security purposes.

Which solution will meet these requirements?

C. Configure an Amazon API Gateway endpoint in front of an Amazon Kinesis Data Firehose that stores the information that the company receives in an Amazon S3 bucket. Use an API Gateway Lambda authorizer to resolve authorization.

Amazon API Gateway: It provides a fully managed service for creating, publishing, maintaining, monitoring, and securing APIs at any scale. It allows you to expose the capabilities of your backend services as APIs.

Amazon Kinesis Data Firehose: It can capture and load streaming data into storage services such as Amazon S3. It is well-suited for scenarios where you need to ingest and store large volumes of streaming data.

API Gateway Lambda Authorizer: It allows you to control access to your APIs using Lambda functions. It's used to resolve authorization before allowing access to the API.

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588] An ecommerce company wants a disaster recovery solution for its Amazon RDS DB instances that run Microsoft SQL Server Enterprise Edition. The company's current recovery point objective (RPO) and recovery time objective (RTO) are 24 hours.

Which solution will meet these requirements MOST cost-effectively?

D. Copy automatic snapshots to another Region every 24 hours.

RDS automatically takes snapshots of your database instances. These snapshots capture the entire DB instance, including the data and the DB instance's metadata.

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589] A company runs a web application on Amazon EC2 instances in an Auto Scaling group behind an Application Load Balancer that has sticky sessions enabled. The web server currently hosts the user session state. The company wants to ensure high availability and avoid user session state loss in the event of a web server outage.

Which solution will meet these requirements?

B. Use Amazon ElastiCache for Redis to store the session state. Update the application to use ElastiCache for Redis to store the session state.

ElastiCache for Redis is an in-memory data store service that is well-suited for storing session data. It provides high availability and durability. Using Redis allows the application to offload the session state from individual EC2 instances to a centralized and highly available Redis cluster.

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590] A company migrated a MySQL database from the company's on-premises data center to an Amazon RDS for MySQL DB instance. The company sized the RDS DB instance to meet the company's average daily workload. Once a month, the database performs slowly when the company runs queries for a report. The company wants to have the ability to run reports and maintain the performance of the daily workloads.

Which solution will meet these requirements?

A. Create a read replica of the database. Direct the queries to the read replica.

Read Replica: Creating a read replica of the database allows you to offload read queries to a replica instance. This helps in distributing the workload and prevents the additional load from impacting the performance of the primary database.

Direct Queries to the Read Replica: By directing the queries for the monthly reports to the read replica, you ensure that the heavy reporting workload doesn't affect the performance of the primary database handling daily workloads. Read replicas are designed to handle read-intensive workloads, providing a scalable solution.

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591] A company runs a container application by using Amazon Elastic Kubernetes Service (Amazon EKS). The application includes microservices that manage customers and place orders. The company needs to route incoming requests to the appropriate microservices.

Which solution will meet this requirement MOST cost-effectively?

B. Use the AWS Load Balancer Controller to provision an Application Load Balancer.

This is a Kubernetes-native controller that allows you to define and manage Application Load Balancers and Network Load Balancers to route traffic to services in your Amazon EKS cluster.

ALBs are designed for routing HTTP/HTTPS traffic and provide more advanced routing features compared to Network Load Balancers.

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592] A company uses AWS and sells access to copyrighted images. The company’s global customer base needs to be able to access these images quickly. The company must deny access to users from specific countries. The company wants to minimize costs as much as possible.

Which solution will meet these requirements?

D. Use Amazon S3 to store the images. Use Amazon CloudFront to distribute the images with geographic restrictions. Provide a signed URL for each customer to access the data in CloudFront.

By using CloudFront, you can cache and serve the images from edge locations around the world, improving access speed for global customers.

Geographic Restrictions in CloudFront: CloudFront allows you to set up geographic restrictions to deny access to users from specific countries.

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593] A solutions architect is designing a highly available Amazon ElastiCache for Redis based solution. The solutions architect needs to ensure that failures do not result in performance degradation or loss of data locally and within an AWS Region. The solution needs to provide high availability at the node level and at the Region level.

Which solution will meet these requirements?

A. Use Multi-AZ Redis replication groups with shards that contain multiple nodes.

Multi-AZ (Availability Zone) replication groups provide high availability at the node level. In a Multi-AZ setup, your data is replicated asynchronously to a standby replica in a different Availability Zone.

Using shards with multiple nodes within each Availability Zone further enhances availability and provides scalability.

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594] A company plans to migrate to AWS and use Amazon EC2 On-Demand Instances for its application. During the migration testing phase, a technical team observes that the application takes a long time to launch and load memory to become fully productive.

Which solution will reduce the launch time of the application during the next testing phase?

C. Launch the EC2 On-Demand Instances with hibernation turned on. Configure EC2 Auto Scaling warm pools during the next testing phase.

When you launch EC2 On-Demand Instances with hibernation turned on, the instances can be hibernated and resumed rather than terminated and launched.

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595] A company's applications run on Amazon EC2 instances in Auto Scaling groups. The company notices that its applications experience sudden traffic increases on random days of the week. The company wants to maintain application performance during sudden traffic increases.

Which solution will meet these requirements MOST cost-effectively?

C. Use dynamic scaling to change the size of the Auto Scaling group.

Dynamic Scaling: With dynamic scaling, the Auto Scaling group automatically adjusts its capacity based on real-time demand. It scales out during traffic spikes and scales in during periods of lower demand. This ensures that your application can handle sudden increases in traffic without manual intervention.

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596] An ecommerce application uses a PostgreSQL database that runs on an Amazon EC2 instance. During a monthly sales event, database usage increases and causes database connection issues for the application. The traffic is unpredictable for subsequent monthly sales events, which impacts the sales forecast. The company needs to maintain performance when there is an unpredictable increase in traffic.

Which solution resolves this issue in the MOST cost-effective way?

A. Migrate the PostgreSQL database to Amazon Aurora Serverless v2.

Aurora Serverless is a serverless relational database engine provided by Amazon. It automatically adjusts its capacity based on actual usage, allowing it to scale up or down as needed. Aurora Serverless v2 builds upon the original Aurora Serverless model with additional features for even more efficient scaling.

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597] A company hosts an internal serverless application on AWS by using Amazon API Gateway and AWS Lambda. The company’s employees report issues with high latency when they begin using the application each day. The company wants to reduce latency.

Which solution will meet these requirements?

B. Set up a scheduled scaling to increase Lambda provisioned concurrency before employees begin to use the application each day.

Lambda Provisioned Concurrency: Provisioned concurrency is the number of simultaneous executions that your function can handle. By setting up a scheduled scaling to increase Lambda provisioned concurrency before employees begin using the application, you are proactively ensuring that there are enough resources available to handle the expected load.

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598] A research company uses on-premises devices to generate data for analysis. The company wants to use the AWS Cloud to analyze the data. The devices generate .csv files and support writing the data to an SMB file share. Company analysts must be able to use SQL commands to query the data. The analysts will run queries periodically throughout the day.

Which combination of steps will meet these requirements MOST cost-effectively? (Choose three.)

A. Deploy an AWS Storage Gateway on premises in Amazon S3 File Gateway mode.

C. Set up an AWS Glue crawler to create a table based on the data that is in Amazon S3.

F. Setup Amazon Athena to query the data that is in Amazon S3. Provide access to analysts.

This step allows you to seamlessly integrate on-premises devices with AWS S3, providing a scalable and cost-effective storage solution. The AWS Storage Gateway in S3 File Gateway mode enables you to write data from on-premises devices to S3.

AWS Glue can discover, catalog, and transform data from S3. By setting up a Glue crawler, you create a table schema based on the .csv files in S3. This step prepares the data for analysis.

Amazon Athena allows you to run SQL queries directly on the data stored in S3 without the need for a dedicated database. You can create databases and tables in Athena based on the cataloged data using Glue.

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599] A company wants to use Amazon Elastic Container Service (Amazon ECS) clusters and Amazon RDS DB instances to build and run a payment processing application. The company will run the application in its on-premises data center for compliance purposes.

A solutions architect wants to use AWS Outposts as part of the solution. The solutions architect is working with the company's operational team to build the application.

Which activities are the responsibility of the company's operational team? (Choose three.)

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600] A company is planning to migrate a TCP-based application into the company's VPC. The application is publicly accessible on a nonstandard TCP port through a hardware appliance in the company's data center. This public endpoint can process up to 3 million requests per second with low latency. The company requires the same level of performance for the new public endpoint in AWS.

What should a solutions architect recommend to meet this requirement?

A. Deploy a Network Load Balancer (NLB). Configure the NLB to be publicly accessible over the TCP port that the application requires.

Network Load Balancer (NLB): It operates at the connection level (Layer 4) and is well-suited for TCP traffic. It can handle millions of requests per second with minimal latency.

NLB allows you to configure the listener for the specific TCP port that the application requires, ensuring compatibility with the nonstandard TCP port used by the application.

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601] A company runs its critical database on an Amazon RDS for PostgreSQL DB instance. The company wants to migrate to Amazon Aurora PostgreSQL with minimal downtime and data loss.

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

B. Create an Aurora read replica of the RDS for PostgreSQL DB instance. Promote the Aurora read replicate to a new Aurora PostgreSQL DB cluster.

Aurora Read Replica: Creating an Aurora read replica from the RDS for PostgreSQL DB instance is a low-impact operation that allows you to replicate the data to Aurora with minimal downtime.

Promote to Aurora PostgreSQL DB Cluster: Once the read replica is in sync with the primary RDS instance, you can promote the Aurora read replica to become the new primary cluster.

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602] A company's infrastructure consists of hundreds of Amazon EC2 instances that use Amazon Elastic Block Store (Amazon EBS) storage. A solutions architect must ensure that every EC2 instance can be recovered after a disaster.

What should the solutions architect do to meet this requirement with the LEAST amount of effort?

C. Use AWS Backup to set up a backup plan for the entire group of EC2 instances. Use the AWS Backup API or the AWS CLI to speed up the restore process for multiple EC2 instances.

AWS Backup: AWS Backup is a fully managed backup service that centralizes and automates the backup of data across AWS services.

Backup Plan: You can set up a backup plan in AWS Backup to create and manage backups of the entire group of EC2 instances.

AWS Backup provides a streamlined process for restoring data. You can use the AWS Backup console, API, or AWS CLI to initiate the restore process for multiple EC2 instances.

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603] A company recently migrated to the AWS Cloud. The company wants a serverless solution for large-scale parallel on-demand processing of a semistructured dataset. The data consists of logs, media files, sales transactions, and IoT sensor data that is stored in Amazon S3. The company wants the solution to process thousands of items in the dataset in parallel.

Which solution will meet these requirements with the MOST operational efficiency?

B. Use the AWS Step Functions Map state in Distributed mode to process the data in parallel.

The Map state in AWS Step Functions is designed for parallel processing. In Distributed mode, it efficiently processes items in parallel, providing a scalable solution. This allows you to process thousands of items concurrently, achieving high throughput.

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604] A company will migrate 10 PB of data to Amazon S3 in 6 weeks. The current data center has a 500 Mbps uplink to the internet. Other on-premises applications share the uplink. The company can use 80% of the internet bandwidth for this one-time migration task.

Which solution will meet these requirements?

D. Order multiple AWS Snowball devices. Copy the data to the devices. Send the devices to AWS to copy the data to Amazon S3.

With only a 500 Mbps uplink bandwidth shared among other on-premises applications, transferring 10 PB of data over the internet would be impractical and time-consuming. AWS Snowball provides a physical device that can be shipped to the company to facilitate faster initial data transfer.

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605] A company has several on-premises Internet Small Computer Systems Interface (ISCSI) network storage servers. The company wants to reduce the number of these servers by moving to the AWS Cloud. A solutions architect must provide low-latency access to frequently used data and reduce the dependency on on-premises servers with a minimal number of infrastructure changes.

Which solution will meet these requirements?

D. Deploy an AWS Storage Gateway volume gateway that is configured with cached volumes.

A volume gateway with cached volumes is a good fit when you want to keep frequently accessed data on-premises for low-latency access while still having a copy in the AWS Cloud. Cached volumes store the entire dataset in Amazon S3 while retaining the most frequently accessed data locally.

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606] A solutions architect is designing an application that will allow business users to upload objects to Amazon S3. The solution needs to maximize object durability. Objects also must be readily available at any time and for any length of time. Users will access objects frequently within the first 30 days after the objects are uploaded, but users are much less likely to access objects that are older than 30 days.

Which solution meets these requirements MOST cost-effectively?

B. Store all the objects in S3 Standard with an S3 Lifecycle rule to transition the objects to S3 Standard-Infrequent Access (S3 Standard-IA) after 30 days.

Storing objects in S3 Standard ensures low-latency access and high durability. After 30 days, transitioning objects to S3 Standard-IA allows you to take advantage of a lower storage cost for objects that are less frequently accessed.

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607] A company has migrated a two-tier application from its on-premises data center to the AWS Cloud. The data tier is a Multi-AZ deployment of Amazon RDS for Oracle with 12 TB of General Purpose SSD Amazon Elastic Block Store (Amazon EBS) storage. The application is designed to process and store documents in the database as binary large objects (blobs) with an average document size of 6 MB.

The database size has grown over time, reducing the performance and increasing the cost of storage. The company must improve the database performance and needs a solution that is highly available and resilient.

Which solution will meet these requirements MOST cost-effectively?

C. Create an Amazon S3 bucket. Update the application to store documents in the S3 bucket. Store the object metadata in the existing database.

Amazon S3 is highly scalable, durable, and cost-effective for storing objects, making it well-suited for binary large objects (blobs) such as documents. It provides low-latency access and is designed to handle large volumes of data.

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608] A company has an application that serves clients that are deployed in more than 20.000 retail storefront locations around the world. The application consists of backend web services that are exposed over HTTPS on port 443. The application is hosted on Amazon EC2 instances behind an Application Load Balancer (ALB). The retail locations communicate with the web application over the public internet. The company allows each retail location to register the IP address that the retail location has been allocated by its local ISP.

The company's security team recommends to increase the security of the application endpoint by restricting access to only the IP addresses registered by the retail locations.

What should a solutions architect do to meet these requirements?

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609] A company is building a data analysis platform on AWS by using AWS Lake Formation. The platform will ingest data from different sources such as Amazon S3 and Amazon RDS. The company needs a secure solution to prevent access to portions of the data that contain sensitive information.

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

B. Create data filters to implement row-level security and cell-level security.

AWS Lake Formation allows you to create data filters that can be used for row-level security and cell-level security.

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610] A company deploys Amazon EC2 instances that run in a VPC. The EC2 instances load source data into Amazon S3 buckets so that the data can be processed in the future. According to compliance laws, the data must not be transmitted over the public internet. Servers in the company's on-premises data center will consume the output from an application that runs on the EC2 instances.

Which solution will meet these requirements?

B. Deploy a gateway VPC endpoint for Amazon S3. Set up an AWS Direct Connect connection between the on-premises network and the VPC.

A gateway VPC endpoint allows communication between resources in your VPC and Amazon S3 without traversing the public internet.

AWS Direct Connect provides a dedicated network connection from the on-premises data center to the VPC. This dedicated connection enhances security and ensures a reliable and consistent connection between on-premises servers and the EC2 instances in the VPC.

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611] A company has an application with a REST-based interface that allows data to be received in near-real time from a third-party vendor. Once received, the application processes and stores the data for further analysis. The application is running on Amazon EC2 instances.

The third-party vendor has received many 503 Service Unavailable Errors when sending data to the application. When the data volume spikes, the compute capacity reaches its maximum limit and the application is unable to process all requests.

Which design should a solutions architect recommend to provide a more scalable solution?

A. Use Amazon Kinesis Data Streams to ingest the data. Process the data using AWS Lambda functions.

Kinesis Data Streams is designed for ingesting and processing real-time streaming data at scale. It can handle large volumes of data and provides the ability to scale horizontally.

Using Lambda functions allows for serverless, event-driven processing of the data. Lambda automatically scales based on the number of incoming events, providing the needed elasticity to handle spikes in data volume without the need to manage underlying infrastructure.

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612] A company has an application that runs on Amazon EC2 instances in a private subnet. The application needs to process sensitive information from an Amazon S3 bucket. The application must not use the internet to connect to the S3 bucket.

Which solution will meet these requirements?

D. Configure a VPC endpoint. Update the S3 bucket policy to allow access from the VPC endpoint. Update the application to use the new VPC endpoint.

VPC Endpoint for S3: A VPC endpoint allows you to privately connect your VPC to supported AWS services, including Amazon S3, without traversing the public internet. This ensures secure and direct access to S3 from within your VPC.

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613] A company uses Amazon Elastic Kubernetes Service (Amazon EKS) to run a container application. The EKS cluster stores sensitive information in the Kubernetes secrets object. The company wants to ensure that the information is encrypted.

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

B. Enable secrets encryption in the EKS cluster by using AWS Key Management Service (AWS KMS).

Amazon EKS provides built-in support for encrypting Kubernetes secrets using AWS Key Management Service (AWS KMS). You can enable this feature at the EKS cluster level.

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614] A company is designing a new multi-tier web application that consists of the following components:

• Web and application servers that run on Amazon EC2 instances as part of Auto Scaling groups

• An Amazon RDS DB instance for data storage

A solutions architect needs to limit access to the application servers so that only the web servers can access them.

Which solution will meet these requirements?

D. Deploy an Application Load Balancer with a target group that contains the application servers' Auto Scaling group. Configure the security group to allow only the web servers to access the application servers.

An ALB is a load balancer service provided by AWS that allows you to distribute incoming application traffic across multiple targets, such as EC2 instances. In this scenario, the ALB is deployed in front of the application servers.

The ALB is configured with a target group that includes the application servers' Auto Scaling group instances. The target group defines where the ALB directs traffic.

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615] A company runs a critical, customer-facing application on Amazon Elastic Kubernetes Service (Amazon EKS). The application has a microservices architecture. The company needs to implement a solution that collects, aggregates, and summarizes metrics and logs from the application in a centralized location.

Which solution meets these requirements?

D. Configure Amazon CloudWatch Container Insights in the existing EKS cluster. View the metrics and logs in the CloudWatch console.

CloudWatch Container Insights is specifically designed for monitoring containerized applications on Amazon EKS and ECS. It provides visibility into the performance of containers, clusters, and microservices.

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616] A company has deployed its newest product on AWS. The product runs in an Auto Scaling group behind a Network Load Balancer. The company stores the product’s objects in an Amazon S3 bucket.

The company recently experienced malicious attacks against its systems. The company needs a solution that continuously monitors for malicious activity in the AWS account, workloads, and access patterns to the S3 bucket. The solution must also report suspicious activity and display the information on a dashboard.

Which solution will meet these requirements?

C. Configure Amazon GuardDuty to monitor and report findings to AWS Security Hub.

Amazon GuardDuty:

GuardDuty is a threat detection service that continuously monitors for malicious activity and unauthorized behavior in your AWS account. It analyzes events, such as API calls and network traffic, to detect potentially malicious activity.

AWS Security Hub:

AWS Security Hub is a comprehensive security service that aggregates and prioritizes security findings from various AWS services, including GuardDuty. It provides a centralized dashboard for security alerts and findings.

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617] A company wants to migrate an on-premises data center to AWS. The data center hosts a storage server that stores data in an NFS-based file system. The storage server holds 200 GB of data. The company needs to migrate the data without interruption to existing services. Multiple resources in AWS must be able to access the data by using the NFS protocol.

Which combination of steps will meet these requirements MOST cost-effectively? (Choose two.)

B. Create an Amazon Elastic File System (Amazon EFS) file system.

E. Install an AWS DataSync agent in the on-premises data center. Use a DataSync task between the on-premises location and AWS.

Amazon EFS is a scalable, fully managed file system that supports the NFSv4 protocol. It is designed to be highly available and can be mounted on multiple EC2 instances concurrently.

Creating an Amazon EFS file system allows you to easily migrate the data and have multiple AWS resources access it concurrently.

AWS DataSync is a service for efficiently transferring large amounts of data between on-premises storage and AWS. By installing a DataSync agent in the on-premises data center, you can use DataSync to perform the migration task.

DataSync ensures efficient and secure transfer of data, making it suitable for migrating large amounts of data to AWS.

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618] A company wants to use Amazon FSx for Windows File Server for its Amazon EC2 instances that have an SMB file share mounted as a volume in the us-east-1 Region. The company has a recovery point objective (RPO) of 5 minutes for planned system maintenance or unplanned service disruptions. The company needs to replicate the file system to the us-west-2 Region. The replicated data must not be deleted by any user for 5 years.

Which solution will meet these requirements?

C. Create an FSx for Windows File Server file system in us-east-1 that has a Multi-AZ deployment type. Use AWS Backup to create a daily backup plan that includes a backup rule that copies the backup to us-west-2. Configure AWS Backup Vault Lock in compliance mode for a target vault in us-west-2. Configure a minimum duration of 5 years.

FSx for Windows File Server:

Create an FSx for Windows File Server file system in the us-east-1 Region with a Multi-AZ deployment type. The Multi-AZ deployment type ensures high availability.

AWS Backup:

Use AWS Backup to create a daily backup plan for the FSx file system. Include a backup rule that copies the backup to the us-west-2 Region. This ensures that a backup is replicated to the us-west-2 Region regularly.

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619] A solutions architect is designing a security solution for a company that wants to provide developers with individual AWS accounts through AWS Organizations, while also maintaining standard security controls. Because the individual developers will have AWS account root user-level access to their own accounts, the solutions architect wants to ensure that the mandatory AWS CloudTrail configuration that is applied to new developer accounts is not modified.

Which action meets these requirements?

C. Create a service control policy (SCP) that prohibits changes to CloudTrail, and attach it the developer accounts.

SCPs are used in AWS Organizations to set fine-grained permissions and restrictions on AWS accounts within the organization.

By creating an SCP that explicitly prohibits changes to CloudTrail settings, you can enforce this restriction across all developer accounts.

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620] A company is planning to deploy a business-critical application in the AWS Cloud. The application requires durable storage with consistent, low-latency performance.

Which type of storage should a solutions architect recommend to meet these requirements?

C. Provisioned IOPS SSD Amazon Elastic Block Store (Amazon EBS) volume

Provisioned IOPS (Input/Output Operations Per Second) SSD volumes are designed to deliver predictable, consistent, and low-latency performance for critical applications.

These volumes allow you to specify the amount of IOPS you need, providing a consistent level of performance regardless of the volume size.

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621] An online photo-sharing company stores its photos in an Amazon S3 bucket that exists in the us-west-1 Region. The company needs to store a copy of all new photos in the us-east-1 Region.

Which solution will meet this requirement with the LEAST operational effort?

A. Create a second S3 bucket in us-east-1. Use S3 Cross-Region Replication to copy photos from the existing S3 bucket to the second S3 bucket.

S3 Cross-Region Replication (CRR) is designed specifically for replicating objects across different AWS regions. It is a fully managed feature that automatically replicates objects from the source bucket to the destination bucket in a different region. This requires minimal operational effort as it is a built-in S3 feature for cross-region replication, and you don't have to manually trigger actions or configure additional services.

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622] A company is creating a new web application for its subscribers. The application will consist of a static single page and a persistent database layer. The application will have millions of users for 4 hours in the morning, but the application will have only a few thousand users during the rest of the day. The company's data architects have requested the ability to rapidly evolve their schema.

Which solutions will meet these requirements and provide the MOST scalability? (Choose two.)

C. Deploy Amazon DynamoDB as the database solution. Ensure that DynamoDB auto scaling is enabled.

DynamoDB auto scaling allows the database to automatically adjust its read and write capacity based on the application's traffic, making it well-suited for varying workloads.

D. Deploy the static content into an Amazon S3 bucket. Provision an Amazon CloudFront distribution with the S3 bucket as the origin.

Amazon S3 is a highly scalable and durable object storage service, and using CloudFront, a content delivery network (CDN), helps distribute static content globally, reducing latency and providing scalability.

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623] A company uses Amazon API Gateway to manage its REST APIs that third-party service providers access. The company must protect the REST APIs from SQL injection and cross-site scripting attacks.

What is the MOST operationally efficient solution that meets these requirements?

B. Configure AWS WAF.

AWS WAF (Web Application Firewall) is specifically designed to protect web applications from common web exploits like SQL injection and cross-site scripting (XSS) attacks. By configuring AWS WAF with API Gateway, you can create rules to filter and allow or block requests based on defined conditions, providing protection against various types of attacks.

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624] A company wants to provide users with access to AWS resources. The company has 1,500 users and manages their access to on-premises resources through Active Directory user groups on the corporate network. However, the company does not want users to have to maintain another identity to access the resources. A solutions architect must manage user access to the AWS resources while preserving access to the on-premises resources.

What should the solutions architect do to meet these requirements?

D. Configure Security Assertion Markup Language (SAML) 2 0-based federation. Create roles with the appropriate policies attached Map the roles to the Active Directory groups.

using SAML 2.0-based federation, which allows you to integrate AWS with your existing Active Directory infrastructure. This approach enables single sign-on (SSO) for users, meaning they can use their existing corporate credentials to access both on-premises and AWS resources without maintaining separate identities.

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625] A company is hosting a website behind multiple Application Load Balancers. The company has different distribution rights for its content around the world. A solutions architect needs to ensure that users are served the correct content without violating distribution rights.

Which configuration should the solutions architect choose to meet these requirements?

C. Configure Amazon Route 53 with a geolocation policy

Geolocation routing in Amazon Route 53 allows you to route traffic based on the geographic location of the user.

You can create different records for your website content and associate them with specific geographic locations. This way, users from different regions will be directed to the appropriate servers or load balancers hosting the content that adheres to the distribution rights for that region.

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626] A company stores its data on premises. The amount of data is growing beyond the company's available capacity.

The company wants to migrate its data from the on-premises location to an Amazon S3 bucket. The company needs a solution that will automatically validate the integrity of the data after the transfer.

Which solution will meet these requirements?

B. Deploy an AWS DataSync agent on premises. Configure the DataSync agent to perform the online data transfer to an S3 bucket.

AWS DataSync is a service designed for fast and secure online data transfer between on-premises storage and Amazon S3, Amazon EFS, or Amazon FSx for Windows File Server.

DataSync automatically performs integrity validation by ensuring that the data transferred to S3 matches the source data. It uses checksums to validate the integrity of the files.

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627] A company wants to migrate two DNS servers to AWS. The servers host a total of approximately 200 zones and receive 1 million requests each day on average. The company wants to maximize availability while minimizing the operational overhead that is related to the management of the two servers.

What should a solutions architect recommend to meet these requirements?

A. Create 200 new hosted zones in the Amazon Route 53 console Import zone files.

Amazon Route 53 is a highly available and scalable domain name system (DNS) web service provided by AWS.

By creating 200 new hosted zones in the Amazon Route 53 console and importing the existing zone files, you can take advantage of the fully managed and highly available nature of Route 53 without the need to manage servers.

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628] A global company runs its applications in multiple AWS accounts in AWS Organizations. The company's applications use multipart uploads to upload data to multiple Amazon S3 buckets across AWS Regions. The company wants to report on incomplete multipart uploads for cost compliance purposes.

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

C. Configure S3 Storage Lens to report the incomplete multipart upload object count.

S3 Storage Lens is a feature in Amazon S3 that provides a comprehensive view of your storage usage and activity across multiple accounts. It helps you understand, analyze, and optimize your storage usage.

You can use S3 Storage Lens to generate reports on various metrics, including the incomplete multipart upload object count.

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629] A company runs a production database on Amazon RDS for MySQL. The company wants to upgrade the database version for security compliance reasons. Because the database contains critical data, the company wants a quick solution to upgrade and test functionality without losing any data.

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

D. Use Amazon RDS Blue/Green Deployments to deploy and test production changes.

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630] A solutions architect is creating a data processing job that runs once daily and can take up to 2 hours to complete. If the job is interrupted, it has to restart from the beginning.

How should the solutions architect address this issue in the MOST cost-effective manner?

C. Use an Amazon Elastic Container Service (Amazon ECS) Fargate task triggered by an Amazon EventBridge scheduled event.

ECS Fargate is a serverless container service, and it abstracts away the underlying infrastructure. With Fargate, you don't need to manage or provision EC2 instances directly. You can run containers without worrying about the infrastructure, and AWS takes care of scaling and resource allocation.

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631] A social media company wants to store its database of user profiles, relationships, and interactions in the AWS Cloud. The company needs an application to monitor any changes in the database. The application needs to analyze the relationships between the data entities and to provide recommendations to users.

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

B. Use Amazon Neptune to store the information. Use Neptune Streams to process changes in the database.

Amazon Neptune is a fully managed graph database service that is designed for storing and querying highly connected data. It supports the property graph and RDF graph models, making it suitable for scenarios where relationships between data entities need to be analyzed.

Neptune Streams:

Neptune Streams is a feature of Amazon Neptune that allows you to capture changes (inserts, updates, deletes) made to the graph database in a streaming fashion. This streaming capability enables you to react to changes in near real-time and trigger additional processing based on those changes.

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632] A company is creating a new application that will store a large amount of data. The data will be analyzed hourly and will be modified by several Amazon EC2 Linux instances that are deployed across multiple Availability Zones. The needed amount of storage space will continue to grow for the next 6 months.

Which storage solution should a solutions architect recommend to meet these requirements?

C. Store the data in an Amazon Elastic File System (Amazon EFS) file system. Mount the file system on the application instances.

Amazon EFS is a scalable and fully managed file storage service that can be mounted on multiple Amazon EC2 instances simultaneously. It provides a shared file system that can be accessed concurrently from different instances.Amazon EFS can automatically scale its file system capacity to accommodate growing data sets. It can handle a large amount of data and is designed to grow and shrink as needed.

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633] A company manages an application that stores data on an Amazon RDS for PostgreSQL Multi-AZ DB instance. Increases in traffic are causing performance problems. The company determines that database queries are the primary reason for the slow performance.

What should a solutions architect do to improve the application's performance?

C. Create a read replica from the source DB instance. Serve read traffic from the read replica.

Creating read replicas allows you to offload read traffic from the primary (master) DB instance to one or more read replicas. Read replicas can serve read-only queries, distributing the load and improving overall query performance.

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634] A company collects 10 GB of telemetry data daily from various machines. The company stores the data in an Amazon S3 bucket in a source data account.

The company has hired several consulting agencies to use this data for analysis. Each agency needs read access to the data for its analysts. The company must share the data from the source data account by choosing a solution that maximizes security and operational efficiency.

Which solution will meet these requirements?

C. Configure cross-account access for the S3 bucket to the accounts that the agencies own.

By configuring cross-account access, you can grant permissions to specific AWS accounts (owned by the consulting agencies) to access the S3 bucket. This allows you to share the data securely with the agencies without making the data public or creating additional IAM users in the source data account.

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635] A company uses Amazon FSx for NetApp ONTAP in its primary AWS Region for CIFS and NFS file shares. Applications that run on Amazon EC2 instances access the file shares. The company needs a storage disaster recovery (DR) solution in a secondary Region. The data that is replicated in the secondary Region needs to be accessed by using the same protocols as the primary Region.

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

C. Create an FSx for ONTAP instance in the secondary Region. Use NetApp SnapMirror to replicate data from the primary Region to the secondary Region.

FSx for ONTAP supports NetApp SnapMirror, which is a robust data replication technology. You can use SnapMirror to replicate data from the primary FSx for ONTAP instance in the primary Region to an FSx for ONTAP instance in the secondary Region.

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636] A development team is creating an event-based application that uses AWS Lambda functions. Events will be generated when files are added to an Amazon S3 bucket. The development team currently has Amazon Simple Notification Service (Amazon SNS) configured as the event target from Amazon S3.

What should a solutions architect do to process the events from Amazon S3 in a scalable way?

C. Create an SNS subscription that sends the event to Amazon Simple Queue Service (Amazon SQS). Configure the SOS queue to trigger a Lambda function.

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637] A solutions architect is designing a new service behind Amazon API Gateway. The request patterns for the service will be unpredictable and can change suddenly from 0 requests to over 500 per second. The total size of the data that needs to be persisted in a backend database is currently less than 1 GB with unpredictable future growth. Data can be queried using simple key-value requests.

Which combination ofAWS services would meet these requirements? (Choose two.)

B. AWS Lambda

C. Amazon DynamoDB

AWS Lambda is a serverless compute service that automatically scales with the number of incoming requests. It's suitable for unpredictable workloads, as it allows you to run code without provisioning or managing servers. Lambda functions can be triggered by API Gateway for handling HTTP requests.

Amazon DynamoDB (Option C):

DynamoDB is a fully managed NoSQL database service that can handle unpredictable and scalable workloads. It provides low-latency, high-throughput performance for simple key-value queries. DynamoDB automatically scales to accommodate varying request rates, and you pay for the throughput you provision.

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638] A company collects and shares research data with the company's employees all over the world. The company wants to collect and store the data in an Amazon S3 bucket and process the data in the AWS Cloud. The company will share the data with the company's employees. The company needs a secure solution in the AWS Cloud that minimizes operational overhead.

Which solution will meet these requirements?

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639] A company is building a new furniture inventory application. The company has deployed the application on a fleet ofAmazon EC2 instances across multiple Availability Zones. The EC2 instances run behind an Application Load Balancer (ALB) in their VPC.

A solutions architect has observed that incoming traffic seems to favor one EC2 instance, resulting in latency for some requests.

What should the solutions architect do to resolve this issue?

A. Disable session affinity (sticky sessions) on the ALB

Session affinity, also known as sticky sessions, directs a client's requests to the same EC2 instance, based on the client's session information. While sticky sessions can be useful in some scenarios, they can lead to uneven distribution of traffic, causing latency for some requests if one EC2 instance is overloaded.

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640] A company has an application workflow that uses an AWS Lambda function to download and decrypt files from Amazon S3. These files are encrypted using AWS Key Management Service (AWS KMS) keys. A solutions architect needs to design a solution that will ensure the required permissions are set correctly.

Which combination of actions accomplish this? (Choose two.)

B. Grant the decrypt permission for the Lambda IAM role in the KMS key's policy

E. Create a new IAM role with the kms:decrypt permission and attach the execution role to the Lambda function.

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641] A company wants to monitor its AWS costs for financial review. The cloud operations team is designing an architecture in the AWS Organizations management account to query AWS Cost and Usage Reports for all member accounts. The team must run this query once a month and provide a detailed analysis of the bill.

Which solution is the MOST scalable and cost-effective way to meet these requirements?

B. Enable Cost and Usage Reports in the management account. Deliver the reports to Amazon S3 Use Amazon Athena for analysis.

Amazon Athena is a serverless query service that allows you to analyze data directly in Amazon S3 using SQL queries.

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642] A company wants to run a gaming application on Amazon EC2 instances that are part of an Auto Scaling group in the AWS Cloud. The application will transmit data by using UDP packets. The company wants to ensure that the application can scale out and in as traffic increases and decreases.

What should a solutions architect do to meet these requirements?

A. Attach a Network Load Balancer to the Auto Scaling group.

UDP is a connectionless protocol, and Network Load Balancers (NLB) support UDP, making them suitable for applications that use UDP for transmitting data.

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643] A company runs several websites on AWS for its different brands. Each website generates tens of gigabytes of web traffic logs each day. A solutions architect needs to design a scalable solution to give the company's developers the ability to analyze traffic patterns across all the company's websites. This analysis by the developers will occur on demand once a week over the course of several months. The solution must support queries with standard SQL.

Which solution will meet these requirements MOST cost-effectively?

A. Store the logs in Amazon S3. Use Amazon Athena tor analysis.

Amazon Athena is a serverless query service that allows you to analyze data directly in Amazon S3 using standard SQL queries. It is cost-effective because you pay only for the queries you run, and there is no need to provision or manage infrastructure.

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644] An international company has a subdomain for each country that the company operates in. The subdomains are formatted as example.com, country1.example.com, and country2.example.com. The company's workloads are behind an Application Load Balancer. The company wants to encrypt the website data that is in transit.

Which combination of steps will meet these requirements? (Choose two.)

A. Use the AWS Certificate Manager (ACM) console to request a public certificate for the apex top domain example com and a wildcard certificate for \*.example.com.

E. Validate domain ownership for the domain by adding the required DNS records to the DNS provider.

AWS Certificate Manager (ACM) is a service provided by Amazon Web Services (AWS) that simplifies the process of managing and provisioning SSL/TLS (Secure Sockets Layer/Transport Layer Security) certificates for your applications and websites. SSL/TLS certificates are essential for encrypting data in transit and securing communication between clients and servers.

ACM requires domain ownership validation before issuing certificates. For wildcard certificates, DNS validation is necessary.

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645] A company is required to use cryptographic keys in its on-premises key manager. The key manager is outside of the AWS Cloud because of regulatory and compliance requirements. The company wants to manage encryption and decryption by using cryptographic keys that are retained outside of the AWS Cloud and that support a variety of external key managers from different vendors.

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

B. Use an AWS Key Management Service (AWS KMS) external key store backed by an external key manager.

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646] solutions architect needs to host a high performance computing (HPC) workload in the AWS Cloud. The workload will run on hundreds of Amazon EC2 instances and will require parallel access to a shared file system to enable distributed processing of large datasets. Datasets will be accessed across multiple instances simultaneously. The workload requires access latency within 1 ms. After processing has completed, engineers will need access to the dataset for manual postprocessing.

Which solution will meet these requirements?

C. Use Amazon FSx for Lustre as a shared file system. Link the file system to an Amazon S3 bucket for postprocessing.

FSx for Lustre is designed for high-performance computing workloads that require fast and scalable shared storage. It provides low-latency access to data and is well-suited for parallel processing across multiple instances.

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647] A gaming company is building an application with Voice over IP capabilities. The application will serve traffic to users across the world. The application needs to be highly available with an automated failover across AWS Regions. The company wants to minimize the latency of users without relying on IP address caching on user devices.

What should a solutions architect do to meet these requirements?

A. Use AWS Global Accelerator with health checks.

AWS Global Accelerator is a service that provides static IP addresses (Anycast) to route traffic over the AWS global network. It routes traffic over the optimal path to the AWS endpoint, improving availability and performance.

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648] A weather forecasting company needs to process hundreds of gigabytes of data with sub-millisecond latency. The company has a high performance computing (HPC) environment in its data center and wants to expand its forecasting capabilities.

A solutions architect must identify a highly available cloud storage solution that can handle large amounts of sustained throughput. Files that are stored in the solution should be accessible to thousands of compute instances that will simultaneously access and process the entire dataset.

What should the solutions architect do to meet these requirements?

B. Use Amazon FSx for Lustre persistent file systems.

Persistent file systems in FSx for Lustre are designed for longer-term storage needs. They provide a durable and highly available solution for your data. This is important for the weather forecasting company's requirement to handle large amounts of sustained throughput.

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649] An ecommerce company runs a PostgreSQL database on premises. The database stores data by using high IOPS Amazon Elastic Block Store (Amazon EBS) block storage. The daily peak I/O transactions per second do not exceed 15,000 IOPS. The company wants to migrate the database to Amazon RDS for PostgreSQL and provision disk IOPS performance independent of disk storage capacity.

Which solution will meet these requirements MOST cost-effectively?

C. Configure the General Purpose SSD (gp3) EBS volume storage type and provision 15,000 IOPS.

Amazon EBS gp3 volumes are designed for general-purpose workloads and offer a balance of price and performance. They allow you to provision IOPS independently of storage capacity, similar to io1 volumes.

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650] A company wants to migrate its on-premises Microsoft SQL Server Enterprise edition database to AWS. The company's online application uses the database to process transactions. The data analysis team uses the same production database to run reports for analytical processing. The company wants to reduce operational overhead by moving to managed services wherever possible.

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

A. Migrate to Amazon RDS for Microsoft SOL Server. Use read replicas for reporting purposes

Amazon RDS supports read replicas, allowing you to offload reporting and analytical workloads to replicas without impacting the performance of the primary database. This is a cost-effective and efficient way to handle reporting without affecting transactional processing on the primary database.